First Automatic Pilger Mill in U. S. Now Operating

By E. C. Kreutzberg

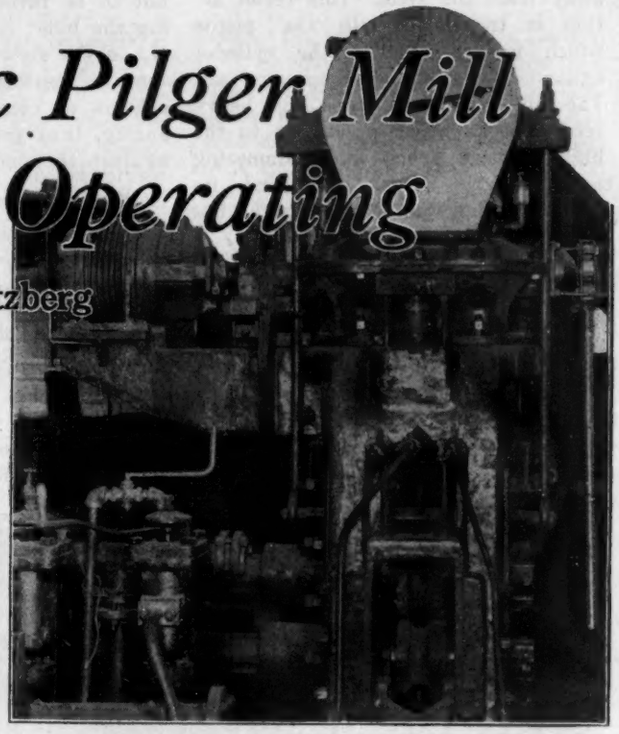

Fig. 1—Front view of pilger mill housing

INSTALLATION of the first automatic pilger mill in the United States recently was completed at the plant of the Delaware Seamless Tube Co., Auburn, Pa. The new mill is equipped with a mechanical feed device which largely eliminates manual work. It also is equipped to strip the tubes from the mandrels, an operation which heretofore has been performed separately.

In principle the new mill is substantially the same as heretofore in use. Incorporated in its construction, however, are certain improvements. It has a motor-driven screwdown for raising and lowering the top roll. It also is provided with a stripping plate which engages a stripping ring on the mandrels, thus permitting the mandrels to be withdrawn from the finished tubes.

The feed operates by means of a hydraulic cylinder and piston. The cylinder is connected with an accumulator which maintains a pressure of 800 pounds a square inch and has capacity of about 35 gallons a minute. This cylinder is set in the bed plate of and is integral with feeding device; the end of the piston is attached to the movable portion of the feeding device. A carriage equipped with a differential air cylinder and housing is mounted on the movable portion. To the end of a piston and inside this cylinder is fitted a spindle. The latter is supported by the housing and, on the other side of the housing, has a mandrel holder.

In operating the apparatus the sequence is as follows. A mandrel is placed on the end of the feed spindle and a pierced billet is placed on the mandrel. The operator then manipulates a valve which actuates the hydraulic cylinder and causes the movable portion of the feeding apparatus to advance slowly toward the mill. By means of another valve the operator causes the end of the billet to be fed forward into the rolls, which revolve continuously.

The rolls are of the regular pilger type, half open and half closed. That is, they are machined with tapering semicircular grooves. The large end of the grooves are shaped similar to the mouth of a bell and taper toward the small end. The latter is made of a size to conform to the outside diameter of the tube. As the closed portions of the rolls grip the billet and reduce its section, the effect is to push the billet back

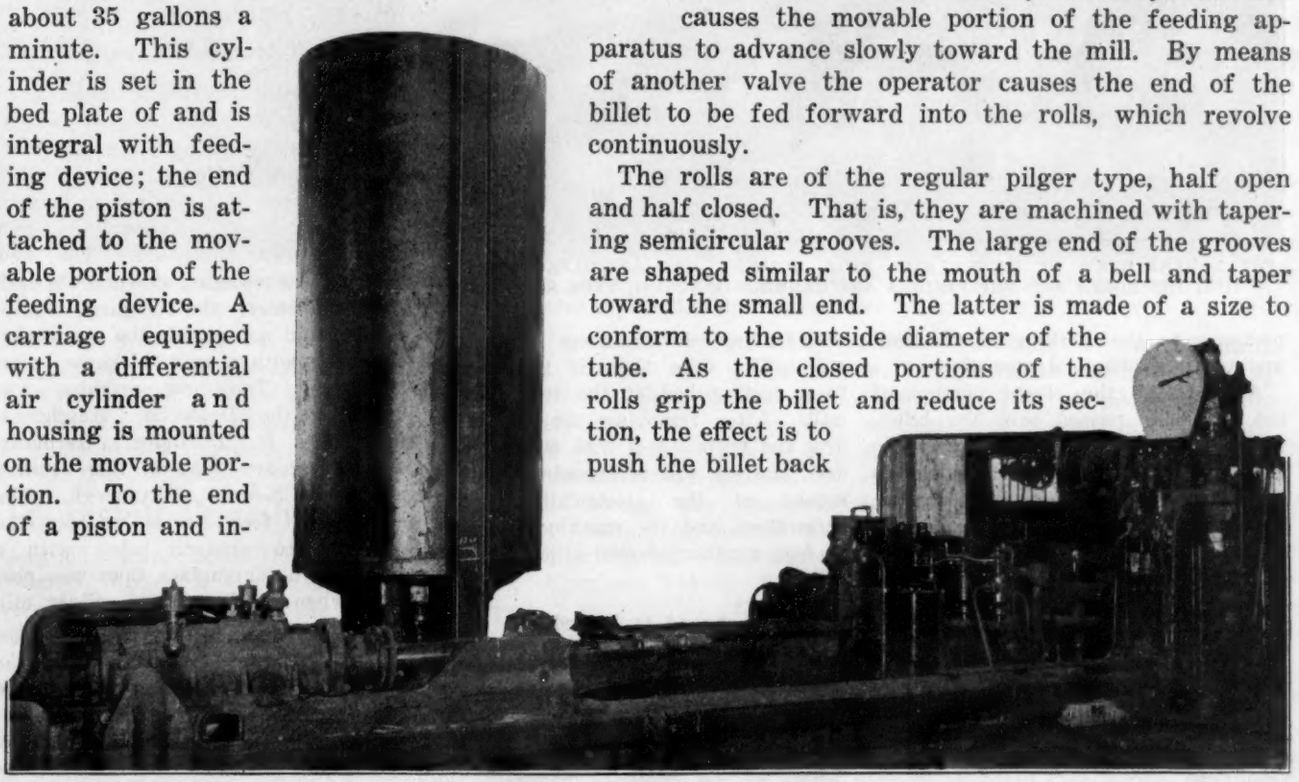

Fig. 2—Pilger mill automatic feeding device in foreground. The hydraulic accumulator in background maintains a pressure of 800 pounds per square inch

away from the rolls. This recoil action is transmitted to the piston which moves back in the cylinder against a cushion of compressed air. The air cylinder absorbs the heavy recoil shocks which occur due to the high rotative speed and hammering action of the pilger rolls, and, its successful functioning is of vital importance to the working of the mill and to its economical operation.

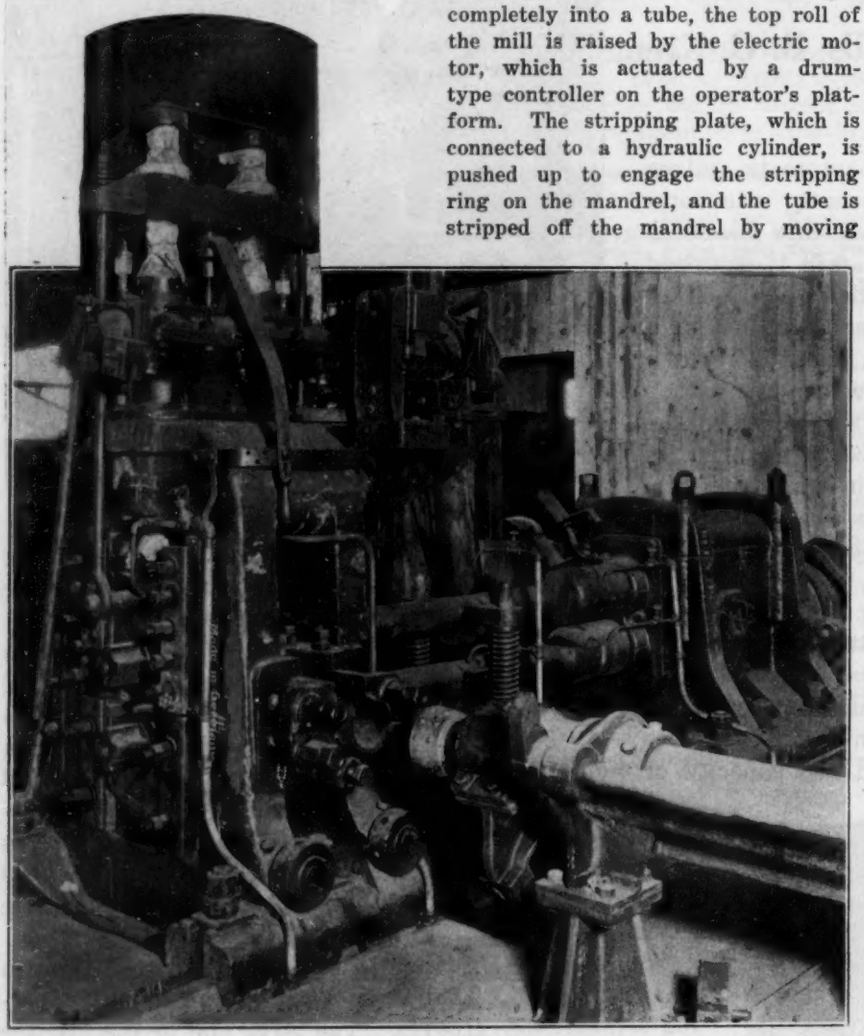

FIG. 3—REAR VIEW OF PILGER MILL ROLL HOUSING. THE SPINDLES CONNECTING THE ROLLS AND THE PINIONS ARE CARRIED IN SPRING TYPE SADDLES

As soon as the closed portion of the rolls has passed over the billet, releasing the grip on the piece, the compressed air in the cylinder causes the piston to rebound. In doing so, the piston is turned through an angle of 90 degrees, thus having the effect of turning the billet in the rolls. This turning is accomplished by reason of the fact that the spindle on the end of the piston is a twisted square section and passes through a nut of corresponding shape in the housing, thus causing the nut to turn as the spindle advances. The nut is set in a ratchet, which on the reverse movement of the spindle, permits the nut to be turned back without rotating the billet in the rolls. Incidentally, on the forward stroke of the piston, its movement is checked by a cushion of compressed air and by a spring, thus preventing undue shocks against the end of the cylinder.

How Stripping Is Accomplished

After the billet has been swaged completely into a tube, the top roll of the mill is raised by the electric motor, which is actuated by a drum-type controller on the operator's platform. The stripping plate, which is connected to a hydraulic cylinder, is pushed up to engage the stripping ring on the mandrel, and the tube is stripped off the mandrel by moving the feeding device away from the mill. The tube then is transferred to a cooling bed at the rear of the mill. After removing the hot mandrel and replacing it with a cold mandrel, the top roll is brought down by means of the electrically-operated screwdown and the machine is ready to feed another pierced billet into the rolls.

Speed Is Varied

A 300-horsepower engine has been installed for driving the new pilger mill. It has variable speeds ranging from 133 to 200 revolutions a minute, so as to vary the speed in accordance with the diameter of the tube to be swaged. The engine was built by the Harrisburg Foundry & Machine Co., Harrisburg, Pa., and has a 12-ton flywheel made by the Mesta Machine Co., Pittsburgh. In addition to the valves for operating the hydraulic cylinder and the stripping plate, the operator's platform also is provided with a valve for regulating the flow of water on the rolls while in action. The feeder operates with mandrels ranging from 6 to 12 feet in length. Inasmuch as the tubes are swaged off the mandrel the company is able to obtain tubes up to 28 feet long.

The Delaware Seamless Tube Co. is one of the pioneer companies in the seamless tube business in this country. This company, directed by the late D. J. Driscoll, installed a pilger mill and a piercing mill at Auburn about 1897, this marking the entrance of the company into the piercing and drawing of seamless tubes. The action of the swaging rolls in the pilger process virtually is a forging action, which produces a homogeneous metal with refinement of structure. The fact that the tubes are swaged over a smooth mandrel tends to preserve a smooth inside surface. By this process the pierced billet has a relatively heavy wall, which means that the steel is comparatively free from rupture due to piercing. The company buys square billets and rolls them into rounds in a hand mill. Before completing the new mill the steel was fed into the pilger mill by hand.

Mill Increases Capacity

As a result of the installation of the new mill, the company's capacity has been increased considerably. It now is able to produce tubes up to 3¼-inch diameter and in lengths up to 28 feet. Formerly 11-foot lengths were maximum. The new mill permits swaging down to ⅛-inch wall thickness; the original equipment would not permit the production of tubing with a wall thickness below 3/16-inch. The new machine was built by the Deutsche Maschinenfabrik, A. G., Duisburg, Germany, which is represented in this country by H. L. Schreck, Pittsburgh. The mechanical feed device enables the company to produce tubes with a smoother outer surface than was possible when feeding into a pilger mill by hand.

The Delaware Seamless Tube Co. for many years has specialized on seamless tubing having highly finished surfaces both inside and out. A regular feature of its cold finishing department is that its drawbenches are fitted with grinding

wheels which are passed over the mandrels each time a tube is drawn, thus keeping the mandrels free of imperfections.

Buy Machine Tool Line

Manning, Maxwell & Moore, Inc., has bought the name, goodwill, drawing and patterns of the Detrick & Harvey Machine Co., Baltimore, Md., and will continue the development and manufacture of the latter's machine tools, including open side and convertible planers, double housing planers and horizontal boring machines. The production of this line will be at the plant of the Putnam Machine Works, Fitchburg, Mass., a subsidiary. This plant has been enlarged in recent years and is equipped for this heavy production. J. W. Niedhardt, president of the Detrick & Harvey Machine Co., will be associated with the buyers, specializing in the line made by his company.

To Install Distributors

Contracts have been closed with Arthur G. McKee & Co., to furnish revolving distributors for the new blast furnaces of the Weirton Steel Co., Weirton, W. Va., and the Midland Coke & Iron Corp., Granite City, Ill. McKee distributors also are being furnished for the Gary and South works of the Illinois Steel Co., Edgar Thomson works of the Carnegie Steel Co., National Tube Co. at McKeesport and the Bourne-Fuller Co., Cleveland.

T. J. Litle New Automotive Engineers Head

Thomas J. Litle Jr., chief engineer of the Lincoln division of Ford Motor Co., Detroit, has been elected president of the Society of Automotive Engineers, succeeding Harry L. Horning, president during 1925.

Other officers elected include: J. H. Hunt, head of electrical research division of General Motors, first vice president; George W. Smith, chief engineer, Nash Motors Co., second vice president of motor car engineering; O. W. Sjogren, professor of agricultural engineering, University of Nebraska, second vice president of tractor engineering; Arthur Nutt, chief motor engineer, Curtis Aeroplane & Motor Co., second vice president of aeronautic engineering; George F. Crouch, vice president, Horace E. Dodge Boat Works, second vice president of marine engineering; C. O. Guernsey, chief engineer of automotive car division, J. G. Brill Co., second vice president of stationary internal combustion engineering; and C. B. Whittelsey, president, Hartford Rubber Works, treasurer.

Buys Old Scotch Firm

The private company of William Jacks & Co., Ltd., of 19, St. Vincent Place, Glasgow, Scotland, having gone into voluntary liquidation, the goodwill of the concern has been purchased by William Jacks & Co. of Winchester House, Old Broad Street, London, E. C. 2, whose offices in Glasgow and Middlesbrough in future will be conducted under the name of William Jacks & Co. instead of William Colvin & Co. as heretofore.

Tool Works Trust Ends

Control of the American Tool Works, Cincinnati, O., passed from the Union Trust Co. of that city to the seven heirs of Franklin Alter Sr., former head of the company, Feb. 26, when a 10-year trust under his will ended. Following Mr. Alter's death in 1916 the estate was inventoried at $1,307,000. Two of the seven heirs hold executive positions with the company. They are Franklin Alter Jr., vice president, and Lucien Alter, purchasing agent. Most of the estate to be divided among the children consists of stock of the company. J. B. Doan, Chicago, became vice president during the elder Alter's illness. Prior to that time he represented the company and several other machine tool manufacturers in the Chicago territory. At Mr. Alter's death he was elected president. Mr. Doan was re-elected president two weeks ago and will continue in office for the present, it was announced. The estate now is estimated to be worth $3,000,000.

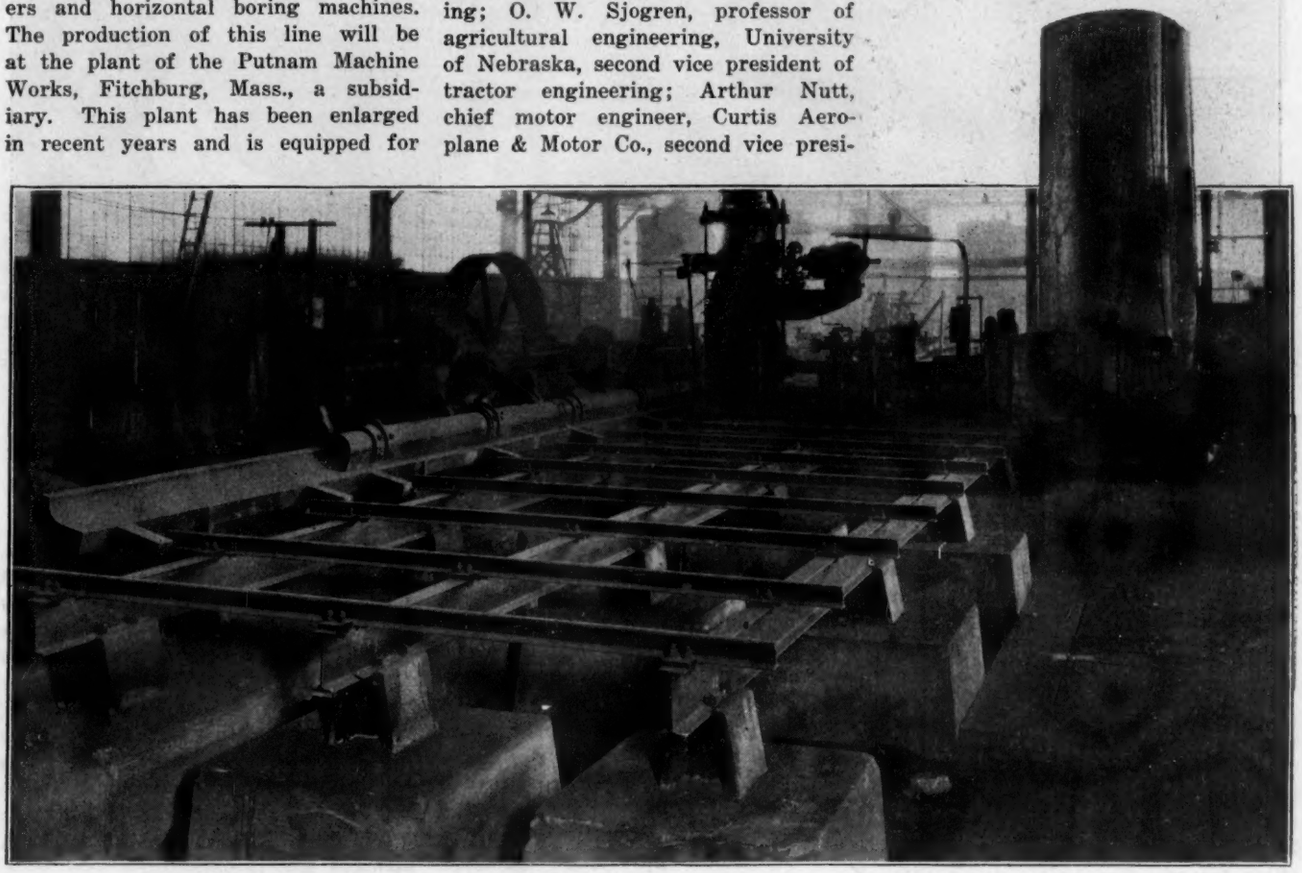

FIG. 4—COOLING BED AT THE REAR OF THE PILGER MILL. RAISING THE GUARD OVER THE RUNOUT TROUGH PERMITS THE FINISHED TUBE TO PASS ONTO THE COOLING RACK

The Theory and Practice of Rolling Steel

By Wilhelm Tafel

Translated from the German by Richard Rimbach

Chapter IV—Continued

IN DETERMINING a square to be entered into a flat-oval pass, Geuze sets the square side a for a round of the diameter d for small profiles as $1.1d$. The rule, which gives a total elongation of 35 per cent reduction from the square to the round finishing pass, which equals or approaches 1.54, also gives good results for profiles up to 3.150 inches. Kirchberg requires an elongation of about 1.3 from the square to the round. The surface of the square then is:

$$Q_1 = \frac{\pi d_w^2}{4} \times 1.3 = a^2$$

$$a = \frac{\pi d_w^2 \times 1.3}{4} = 1.01 d_w$$

The fuller the oval, that is, the more it approaches the round cross-section, the smaller the reduction and the more exact the round will be in width. The more even a round is in its horizontal diameter, the more easily it falls over and, hence, over fills to produce defective material. The elongation, therefore, according as a greater or lesser accuracy of the finished stock is desired, is varied from the square to the round between the foregoing limits and between the more or less slender ovals of the previously discussed constructions.

In order to overcome the production of improperly rolled material, the author built a device shown in Fig. 99 to be set up behind the finishing roll. The arrangement consists of a pair of small, idle vertical rolls, a, which operate in ball bearings; half of each roll is rounded off at the sides. A two-piece, tube-shaped, stripper guard $b\,b$ is provided to receive the piece as it comes from the rolls and lead it to the vertical rolls, where it is passed between without bending outwardly. The horizontal spreading diameter, which in these rolls becomes the pressed, is brought to an exact dimension. In order to insure the stock being pushed through vertical rolls, the draft can only be made a few thousandths of an inch or about 1 per cent of the diameter of the round. This is desirable because slight draft in the finishing pass gives accuracy to the final product. The danger which otherwise would exist with low draft causing the round to fall over or leave the rolls crooked, disappears. The reason for this is that the guide in front of the horizontal rolls holds the piece upright. Moreover, since the stresses from the horizontal rolls are preserved in the vertical rolls, a straight exit is obtained.

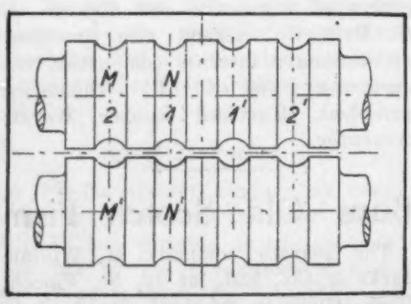

FIG. 98—THE LIFE OF CONTINUOUS ROLLS CAN BE EXTENDED BY TURNING THEM 180 DEGREES

Rounds from 0.157 to 0.472-inch to be drawn after rolling usually are coiled. The manufacture process is similar to that of rounds, except that in order to increase the production of the train, from two to six wires are running alongside one another in each stand. Each wire is entered once in each stand, and is changed from a square to an oval by an automatic guide and from an oval to a square either automatically or by hand. The latter process mostly is used. The automatic entering into the oval pass is difficult, because the square must be turned 90 degrees. In addition the guide is set tight to hold the piece rigidly and for this reason the oval must be pushed into the pass with considerable force. This is difficult to do with the red hot stock, which bends easily. The passes are

designed for slender ovals in order that the guides may be held together sufficiently to prevent the stock falling over. Considerable importance is attached to the square in front of the guide oval. If an elliptic cross-section with a slight difference between the axes b and h in Fig. 100 is taken, little draft (b_1—d) and little spread (d—h_1) results. Small draft is indicative to small spread. A similar regulation is associated with the oval. If the same cross-section with the lower height of oval, h_2, is entered a larger width, b, results because with the larger draft the steel will spread more. If the oval to the round pass has much spread, in other words, if it is held down, it therefore automatically receives considerable draft. Consequently it is essential to have an accurately turned and adjusted round finishing pass and square pass. The oval within certain limits adjusts itself or can be regulated by the position of the top roll. These relations also are expressed in the following table:

GUIDE OVAL AND GUIDE SQUARE FOR ROUND WIRE

Side of square inches	Dimensions of guide oval, inches	Finished round
0.197	0.341 x 0.134	0.197
0.207	0.243 x 0.138	0.197
0.197	0.315 x 0.148	0.197
0.197	0.315 x 0.138	0.197
0.197	0.323 x 0.138	0.197
0.197	0.315 x 0.118	0.197
0.197	0.355 x 0.138	0.197
0.197	0.306 x 0.118	0.197
0.197	0.355 x 0.150	0.197
0.216	0.374 x 0.157	0.216
0.236	0.413 x 0.169	0.236
0.256	0.433 x 0.177	0.256
0.276	0.472 x 0.197	0.276
0.315	0.512 x 0.236	0.315
0.374	0.551 x 0.266	0.354
0.413	0.630 x 0.295	0.394

In the table the side of the square is equal to the diameter of the wire. The difference of the oval in lines four to eight is due to the temperature and hardness of the wire and the roll setting rather than a variance in the shape of the pass. It equalizes itself in the finishing pass because the cross-section is the same. Where it is, as for example in lines six and eight, chosen smaller, the wire becomes less full. How far this should be empty or full, depends on the conditions in each place. The fulled it is the rounder the wire. The first and last ends of the wire usually show certain differences in the temperature and in the hardness or density.

The danger that such wide unsimilarities lead to, the finishing pass being overfull to a fin formation and consequently to a scrap loss, is smaller the further the average wire cross-section is from the full pass cross-section.

The difference between wire mills and other mills can be summed up as follows:

1. The stock is not turned out straight, but immediately behind the finishing roll is coiled. In this way it is possible to have long lengths. The coils generally weigh from 100 to 130 pounds, or on an average of 120 pounds; with 0.197-inch round wire the rolled length will be 1100 feet. The long lengths are desirable not only from the standpoint of production, but also from the point of further working.
2. The stock is entered in each stand only once, either in the continuous-type mill or alternately above and below in the open-type two-high mill; with the continuous process the stock is in many of the passes at the same time and its cooling is kept comparatively small and uniform in spite of its length.
3. The roll speed is higher than on other mills. With open mills it ranges from 25 to 30 feet, with continuous mills from 33 to 36 feet a second.

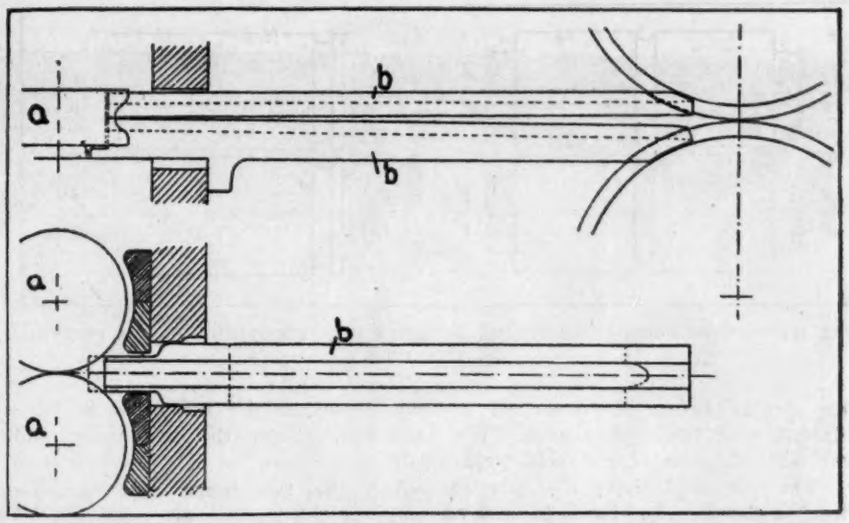

FIG. 99—DIAGRAM OF DEVICE FOR INSTALLATION AT THE REAR OF THE ROLLS TO PREVENT THE PRODUCTION OF IMPROPERLY ROLLED MATERIAL

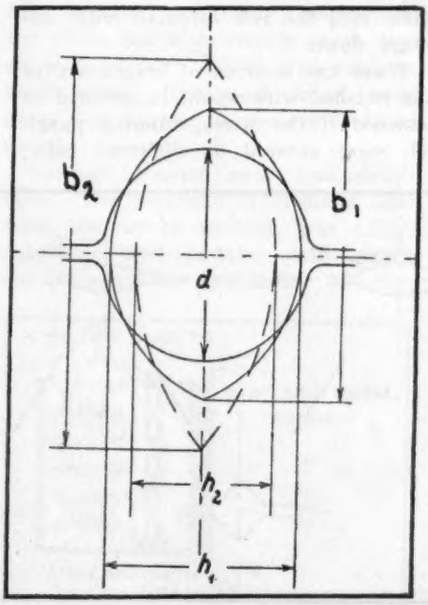

FIG. 100—DESIGN OF A SLENDER OVAL PASS FOR WIRE

The pauses in rolling in the finishing set in comparison to the rolling period will be small, and in spite of the high rolling speed the capacity of the finishing roll is not sufficient for the requirements. Several wires therefore, are rolled simultaneously to increase the production.

The long lengths with small cross-sections give low rolling temperatures in the last passes and, therefore, little reduction at this stage can be given. Small drafts are chosen for wire because sometimes these drafts are dependent on the size of the loops. At other times the passes, which are in use without interruption, are more subject to wear. This is avoided to a certain extent by using tough chilled rolls with the depth of the chill about 1.811 inches. An example of wire passes, taken from the collection of Brovot is shown in Fig. 102. The squares enter the ovals in a flat state according to the dotted line. The resultant ovals are turned on edge by the guides held tight by the short and compact guide box fastened on the rolling beam, and are forced into the square.

With the continuous trains, the entering from one pass to the next is done automatically by repeaters. These take the stock from one roll and eventually imparting the necessary direction guide it to the next roll. In the open mill automatic guiding was tried for both passes and was found to work where the square is led to the oval, without objection. The square, as it leaves the pass rushes in a diagonal position in an arc to the next roll, but lays flat the instant it hits and enters the oval centrally. A side guide is necessary in front of the pass, so that the position of the wire in going through the oval pass is not influenced by the hitting or whipping action that oc-

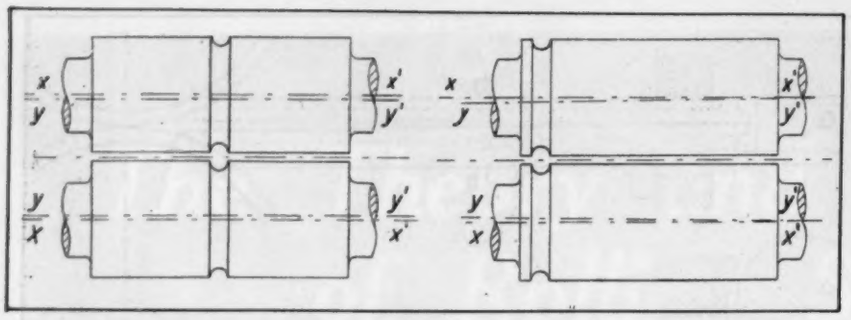

FIG. 101—DIFFERENCE IN THE SPRING OF THE ROLLS ACCORDING TO THE POSITION OF THE PASS

curs shortly before the end. It is different with the square pass. The oval will fall over if not held tightly. The thin, oval-shaped, hot, plastic wires, however, are hard to enter. Guides for entering ovals smaller than 0.787 x 0.315 inch into a square pass seldom are used. Since the finishing pass is set in above, the guide oval lies below, the square above, the smallest stretching oval below, stretching square above, etc. Consequently, all squares lie above and run toward the exit side of the finishing stand; the ovals lie below and run in the opposite direction.

Sources of error which underlie the wire mill do not present themselves with other roll trains. With the open trains two sources prevail. First the rolling of several wires alongside one another on the same roll, especially the finishing roll. When one of the wires reaches its end immediately the spring of the rolls becomes smaller; the pass becomes lower and the oval, receiving a larger draft in the finishing pass, spreads more. The remaining wires assume a larger diameter in the direction of the roll axes. The original condition is restored when the next wire is entered and remains until another wire leaves the rolls, etc. If the pass is at the end, the movement is at an angle as shown in Fig. 101. To avoid the latter form of spring, the position of the passes on the roll is made symmetrical. First the two inner and two outer are used, then the two outer, the two inner, etc. As the wear of the passes varies inequalities soon take place in the position on the roll body and an angular spring results. This different spring of the rolls makes exact shaping of the wire impossible to attain with the guide rounds.

The second reason is that with guide squares and rounds, the most exact setting of the pass is required. If the first of six passes requires a small correction of the top roll to the left, the second probably would require a movement to the right, the third be right, etc. The correction of the first, therefore, spoils the third and increases the error of the second. Even if it were possible to make the passes mathematically equal and the same distance apart, and to enter mathematically equal ovals through accurate guides then the wear never would be the same and this alone would require different corrections of the position of the roll in height as to the side. As this is impossible where the passes lie on the same roll, the roll foreman must average down.

These two sources of inaccuracy of the finished wire would be avoided or lessened if the wires, running parallel, were entered on different rolls; or if reduced on a single roll designed to handle from two to four wires. In the latter case the averaging would only be necessary between two passes and the change of spring would only occur half as often. The oval passes are less sensitive, and, in addition to the stretching passes lying ahead of the square, can remain on the same roll. This process would give more exact wire and lower costs in the drawing plant, but would require more rollers. With continuous mills greater speeds are permissible because of mechanical guides. With open trains the exit speed of the previous roll, a_x, is chosen larger than the entrance speed of the following, e_{x+1}, so that between the two passes a slowly increasing loop is formed. With continuous mills e_{x+1} is made about 2 per cent larger than a_x, so that the second pair of rolls draws the stock slightly. A rod leaves the roll with a certain speed gain, which is dependent on the temperature, the water cooling and the draft. Therefore, if the values of the diameters and the number of revolutions of both rolls were chosen as $_x$ and $_{x+1}$ so that the mentioned speeds wuold turn out the same, a play or pulsation between drawing and draft would result. A correction usually is made to throw the difference between the speeds e_{x+1} and a_x to drawing with the continuous mills and to the side of loop formation.

Drawing complicates the rolling process. It directs the material displaced between the rolls in a forward direction. This is desirable because it increases the elongation and diminishes the spread. Since the spread is no longer dependent on the draft and the size of the roll diameter but on the drawing behind the roll, certain differences can occur. When the rear of the billet has left the first stand of the continuous mill, the ten-

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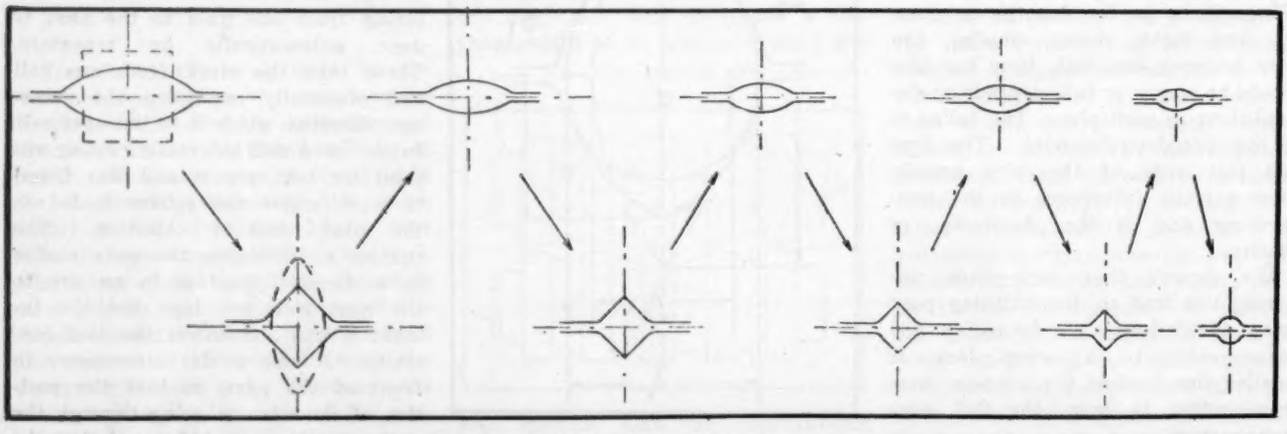


FIG. 102—EXAMPLE OF WIRE PASSES. THE SQUARES ENTER THE OVALS IN A FLAT STATE, ARE TURNED ON EDGE BY GUIDES AND ARE FORCED INTO THE SQUARE

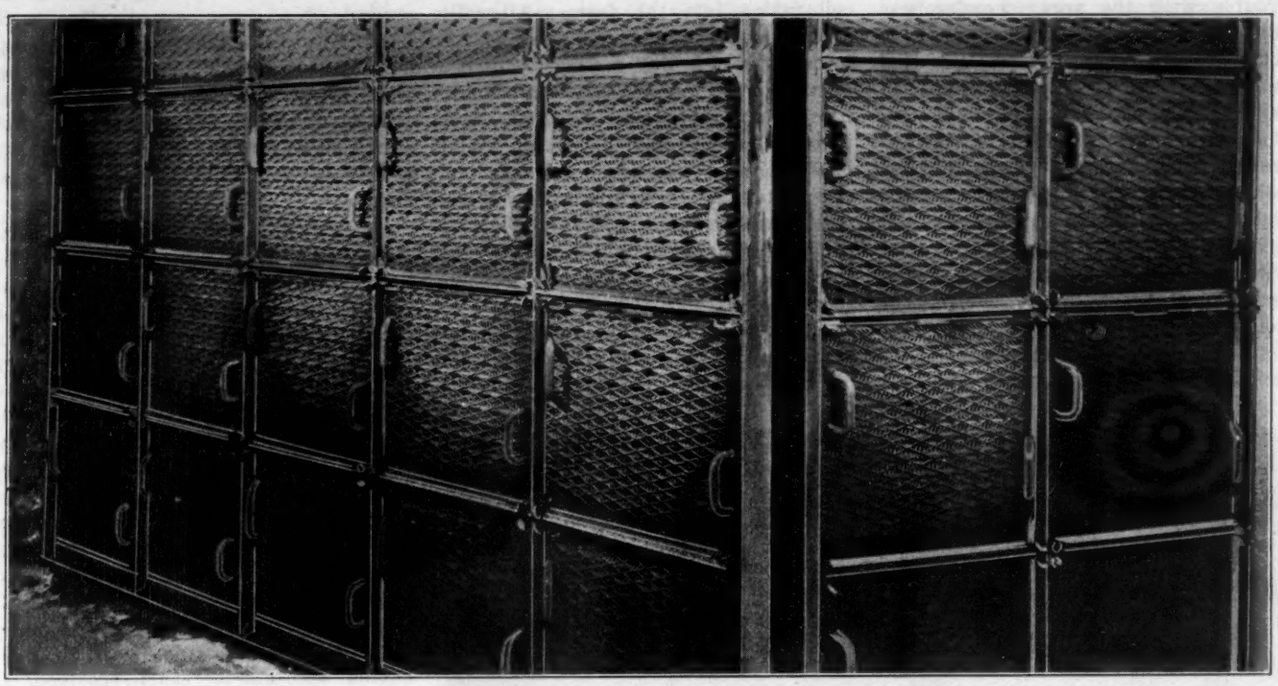


Fig. 1—Air filters of this type are used at many steel plants for keeping dust out of the cool air cycle of large turbogenerator installations, mill motors, etc.

Air Filters Protect Equipment

Damage to Internal Combustion Engines, Turbogenerators, Mill Motors and Air-Cooled Transformers by Dust Is Prevented by Passing Air through Cellular Structures Coated with a Sticky Fluid—Description of Unit

By W. B. Spooner, Jr.

SCREENING was the first and most obvious means of cleaning the air for electrical equipment and for ventilating purposes. Cloth or metal of the desired mesh to catch all but the finest dust particles, was used to screen the air pulled through the ventilating system. The cleaning efficiency was fairly satisfactory at the start, but the screens clogged rapidly and prevented the installation from delivering the required volume. A much larger area was required than the cross-section of the ventilating ducts, if this clogging effect were to be kept from taking place too quickly.

The next development in air cleaning was along the line of increasing the filter area of the screen, which usually was made of cheese cloth. Some improvements also were made in facilitating the removal of the screens for cleaning. The cloth screen still was unsatisfactory because in time, the openings in the screen became plugged with dust particles. Excessive resistance and permanently lowered capacity resulted. Cleaning became practically impossible; the cloth had a relatively short life, as well as high initial and replacement costs. The cloth filter, however, was a step in the right direction.

The air washer next was developed. The principle of cleaning dust from the air by wetting, was different from that of the cloth screen and removed the possibility of clogging, except in the spray nozzles. The resistance was low and constant but the efficiency was higher than that of the cloth screen. One of the first difficulties of the air washer, was the tendency to allow particles of water to pass through the washer into the air stream. This was eliminated by the use of eliminator plates, and when due investigation was made, it was found that these plates also served as air cleaners.

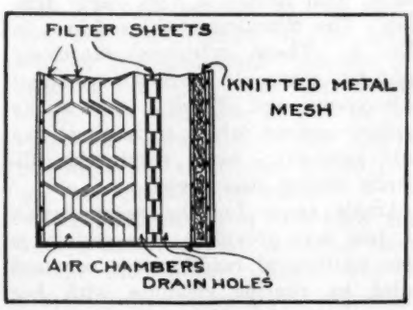


FIG. 2—SECTIONAL VIEW OF PART OF A FILTER CELL

The air washer had a definite advantage, in that it cooled the air slightly. But this was offset by the use of so much water to obtain the cleaning effect, that the tendency of the air washer to overhumidify the air was marked. In general ventilation this is a serious handicap. In the ventilation of electrical equipment it commands consideration.

In contrast to the cloth screen the air washer, in addition to the fan, had a number of accessories such as pumps and motors which consumed power, and were subject

The author, W. B. Spooner, Jr., is a chemical engineer, New York.

to breakdowns and repair costs. Trouble with the spray nozzles was not infrequent while the corrosive action of the water and air led to a rather high replacement item in the washer itself. The quantity of water consumed added to the operating cost and the protection required during the winter months made for additional expense.

While the air washer was more efficient than the cloth screen, soot and carbonaceous matter were not removed efficiently because of their physical make up, and the relatively high efficiency, which could be obtained in the laboratory, was not obtained under operating conditions. The first cost of an air washer was high, as were operating and maintenance costs. Space not always was available for the washer and its accessories, but in default of better equipment, air washers were installed extensively.

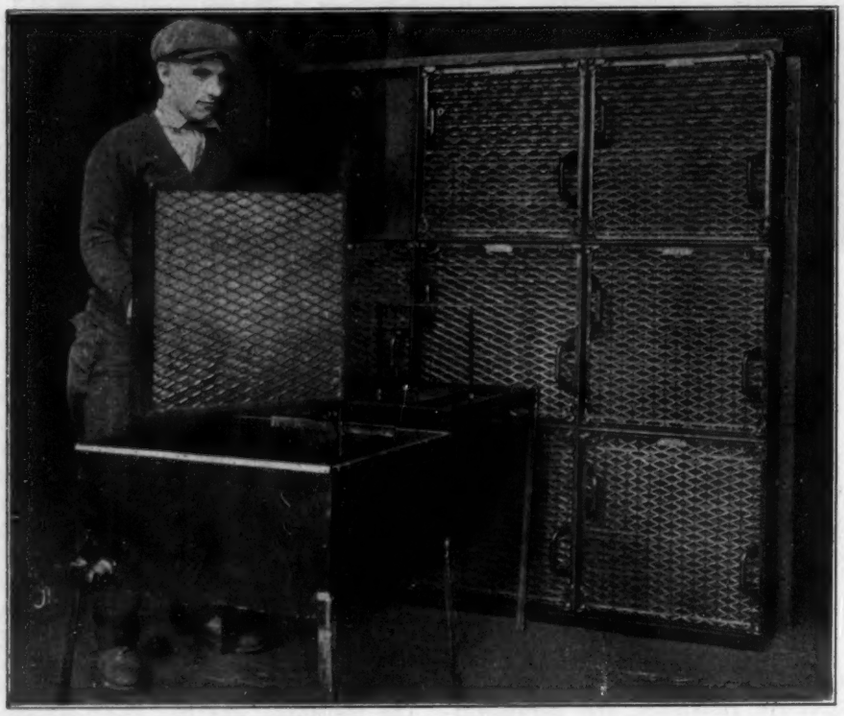


FIG. 3—AFTER BEING WASHED, EACH FILTER CELL IS COATED WITH A STICKY, NONFLAMMABLE FLUID

Numerous attempts to clean air by means other than cloth screens incorporated the use of such mediums as hair, vegetable fiber, steel wool and other similar materials. Substantially they acted as the cloth screen, with similar defects.

Approximately four years ago an air filter was introduced based on the unit principle, so that flexibility and the ability to meet varying conditions of space and capacity could be attained easily.

The unit, 20x20x3½ inches overall, consisted of a frame and a filter cell fitting into the frame. All cells and frames were interchangeable. An installation of the required number of units was assembled in an angle iron frame to make a filter wall through which only clean air could pass. The operating principle of this filter and the improved types which have succeeded it, is that of baffle impingement. This involves the breaking up of the air stream into innumerable small subcurrents by proper arrangement of the filter medium and the collection of dust by causing these dust carrying subcurrents of air to impinge against the sticky coated surfaces of the filter medium.

This first type of air filter had a filter medium consisting of hundreds of small hollow metal cylinders, about ⅜x½ inch, which filled the cell proper. The entire cell was dipped in a sticky, viscious, nonflammable fluid having a high vapor tension. The charging tank is shown in Fig. 3. These cylinders effectively split the main air current into small subcurrents and offered a large sticky surface against which to impinge the dust particles. As a result the efficiency rating was high.

Ample space for the accumulation of dust was provided. The resistance was maintained readily at a constant point by routine cleaning with hot water and soda. No tendency toward permanent clogging was apparent because the filter in no way acted as a screen. No water consumption nor power was required and, therefore, maintenance and replacement costs were limited to the cleaning of the cells and recharging them with the sticky fluid. The capacity of the unit was about 500 cubic feet per minute.

It seemed quite probable that some baffle-impingement type of filter medium might be devised which would allow this capacity to be increased, along with the efficiency.

Improvements Are Made

Steps were taken to improve the filter medium because the metallic cylinders or filter bodies had some tendency to settle down in the cell. This settling caused a channelling effect which led to dust leaking through the filter. Improvements, therefore, incorporated a series of specially shaped corrugated and perforated metal sheets located one behind the other. This provided a similar baffle-impingement effect to that of the filter bodies without their disadvantages.

Capacity was increased to 800 cubic feet per unit; the operating resistance was retained at the same point as in the original type. Cleaning efficiency was improved slightly, and the dust holding capacity of the unit increased. More space intervened between the filter sheets than between the filter bodies, making the cell easier to clean. Additional experiments culminated in the development of the present type shown in Fig 1. The efficiency was increased by a different arrangement of the filter sheets and by the addition of a baffle impingement effect to take care of the fine dust which might pass through the filter sheets. This consists of a series of mats made of knitted metal mesh located at the rear of the cell. Fig. 2 shows a cross-section of the new type cell.

Cleaning is facilitated and clogging prevented by the drainholes provided in the cell back of the filter sheets so that when it is cleaned, the wash water and dust are drained out without tending to fill up the smaller interstices of the copper mesh. An air seal is provided between frames, and between cells and frames. This construction makes a leak tight installation without the necessity for puttying or otherwise repairing of gaps. Projecting turned-over lips at the front side and bottom of all frames, which grip and interlock with corresponding lips on adjoining frames, forms an air-tight front face on the framework. The frames also

are bolted together in the rear. The filter cells are designed to fit bodily into the frames where they are firmly seated against a flange in the rear, being pressed tightly against the flange by four corner lugs and screws. The result is rigid, strong and leak proof installation.

Capacity Is Enlarged

The dust capacity of the new unit is larger because of increased depth. The new unit is 20x20x6½ inches the effective filtering content being 19½x 19½x4 inches. The operating resistance of this unit was not increased by the addition of a further filtering effect, because the new design made it possible to utilize more filter area on the cell. The rated capacity of the new unit is still 800 cubic feet a minute, but because of the larger dust capacity and ease of cleaning, in some cases 1000 cubic feet a minute may be attained.

Cleaning of the cells in an installation is carried on by washing a cell at a time in hot water and soda in a wash tank similar to the charging tank shown in Fig. 3. One man in a small part of his time cleans the cells at the rate of two or three a day.

Air filters of this type are installed on large turbogenerators at the Sparrows Point, and Johnstown plants of the Bethlehem Steel Co., the Carnegie Steel Co., Homestead, Pa., and the Republic Iron & Steel Co., Youngstown, O. The latest developments along these lines have been the use of recirculating cooling systems for turbogenerators. On extremely large installations, where provision has been made for keeping dust out of the cool air cycle, this equipment promises to work satisfactorily.

Motor generators, rotary converters and similar substation apparatus is affected by dust and many installations are being protected against dust damage by air filters. Mill motors are subject to dust troubles and progressive steel mill operators are protecting their motors by air filters accordingly.

One of the most recent installations where the motor house itself is equipped with air filters for the protection of mill motors is at the Jones & Laughlin Steel Corp. The Falcon Steel Co., Niles, O.; the Michigan Steel Corp., Detroit; and the United Alloy Steel Corp., Canton, O., are others providing clean air for their mill motors.

Dust mixed with the lubricating oil forms an ideal grinding paste acting on cylinders, pistons and valves of air compressors or internal combustion engines. Worn pistons, broken or leaking valves and the well known carbon deposits of air compressors and engines are due to dust. The effects of dust on the efficient operation of this equipment can be eliminated by special types of air filters. Where cleaning equipment is installed the wear on valves and cylinders has been reduced; maintenance, repair costs, and shutdown delays have been lowered and carbon deposits eliminated; large savings in lubricating oil consumption have been affected; and full initial efficiency of the equipment maintained.

Theory of Rolling Steel

(*Concluded from Page* 572)

sion in the piece between this and the following stand ceases, because a connection between the two no longer exists. If the billet has a cross-section of 2.362 x 2.362 inches and the distance between the roll stands 3.9 feet, then the cross-section of the billet, which was not drawn, is somewhat larger than the previously drawn part. The 3.9 feet in the finished 0.197 inch wire amounts to $3.9 \times \frac{5.579}{0.031} = 702$ feet.

If the distance between the second and the third stand is 3.9 feet and the reduction 40 per cent in the second, amounts to 0.6 x 702 = 420 feet etc. The cross-section on the whole length of the wire, therefore, is stepped so that the front end drawn between all stands is the smallest and the rear end the heaviest. A part of these inequalities is rolled out in later passes, if one or more open stands are set up behind the continuous mill.

An equalization of the difference in the thicknesses can be brought about by giving little draft in the first pass of the open train. This can be done either by arranging two squares behind one another (the last pass of the continuous and the first of the open train) and turning the stock 90 degrees between these two. The advantage of this arrangement is that all four corners of the square are developed equally at the beginning of the open train. Or, the first pass of the open train can be used as an oval with less draft. In both cases the inequalities of the continuous mills are eliminated before passing into the finishing rolls.

Individual stands of rolls each must have a different gear reduction set to obtain the proper speed. The increased power necessary is almost entirely evened up, in that the short rolls of the continuous train can be given smaller diameters. Because of the tension between stands they will give more elongation and less spread than open rolls with long bodies and the large diameter. On continuous mills, a smaller amount of power is required per ton of elongated material than on open mills in spite of the large bearing and gear friction. This presumably is due to the small spreading losses and to the higher rolling temperature. The latter advantage rests on the greater rolling speed and wears the finishing pass less. On the contrary a disadvantage of the rolling, is that the wire scales more. In the open mills the scale falls off more with decreasing temperature, a proceeding which is also promoted by the loop formation and the loop and entrance guides.

The elongating passes will suffer more than with the open mill, due to the inrceased slip between roll and stock caused by the known drawing. The floor space required for continuous mill is less than with the other, as is also the accessibility and oversight. Finally, the additional inconveniences of the continuous trains are the dependence of the distances of the pitch line diameters of the gears of the individual stands and the necessity, in turning the rolls, always of keeping the same diameter relation. It is advisable to keep whole sets of rolls together and to turn them down with one another. Continuous rolls can be used on one side and after the pass is worn can be turned 180 degrees as shown in Fig. 98. The new pass 1′ then will be in the place of 1, and 2′ in place of 2, the guides therefore can remain in the axes *MM′* and *NN′*.

Will Add 35 Coke Ovens

A contract for the construction of a battery of 35 by-product coke ovens, together with all other plant additions has been awarded to A. T. Leavitt, Cleveland, by the Hamilton By-Product Coke Ovens, Ltd., Hamilton, Ont. The Hamilton company now has a battery of 25 Semet-Solvay ovens, having a daily capacity of 450 tons of coal. The plant additions covered by the new contract will bring the daily capacity of this plant up to 1000 net tons of coal per day. The plant is entirely selfcontained with a modern boiler house, complete by-product recovery plant, coal and coke handling equipment for the preparation of foundry and domestic coke. It is understood that Wilputte ovens will be installed under this contract and that the coke handling equipment will be furnished by Heyl & Patterson, Pittsburgh.

Accuracy Is Needed in Declaring Machinery for Export

Co-operation Sought, to Enhance Value of Trade Data

FOLLOWING a plea for greater accuracy in the compilation of government reports pertaining to exports of industrial machinery, the bureau of foreign and domestic commerce has asked machinery manufacturers to co-operate to make the data more valuable. Letters from the National Machine Tool Builders' association, Committee of Textile Machinery Manufacturers and the Refrigerating Machinery association referring to inaccuracies in the government statistics led to co-operation between bureau representatives and groups of manufacturers.

It was pointed out that the bureau obtains its figures from the treasury department, which reports the exports according to the declarations made by the manufacturers. The information contained in the declarations is not disclosed; hence there is no reason, it is said, for manufacturers to file misleading declarations. The errors are believed to be due mainly to lack of specific directions for the proper classification of the exports; the work being done frequently by those who do not understand the importance of the figures. This has led in some instances to absurd reports, reducing the effectiveness of the figures for those who seek to promote their foreign markets.

The bureau's industrial machinery division has issued a bulletin "Analyzing Foreign Machinery Markets Statistically," from which the accompanying specimen form for proper declaration of exports, and the method of classification, are reproduced. The bulletin gives the following suggestions to exporters:

The value stated on the shipper's export declaration should be the actual selling price, if the goods are sold. If shipped on consignment, without a sale having been made, the market value at the time of exportation at the port of the United States from which exporter should be stated.

Value should not include ocean freight, marine insurance, etc., from the port of departure in the United States. Quantities and values should be stated in whole numbers only, ignoring fractions of less than one-half, and counting one-half and over as a unit.

Declarations should be typewritten or in ink; pencil is not permissible.

If the country of ulimate destination is different from that for which the vessel or car departs, the export declaration should state, as the country of ulimate destination, the country to which the machinery is to be sold. Special care should be taken to state the final destination of goods shipped through Canada to Europe, and of goods to be transshipped in the United Kingdom, the Netherlands, Germany, France, etc., to other countries.

Such classes as "Flourmill and gristmill machinery," No. 7605, are intended to cover equipment primarily designed for use exclusively in the industries named, and not equipment specifically mentioned elsewhere by name in the export schedule. For instance, a shipment containing a stationary steam engine and a belt conveyor, even if for use in a flour mill, should not be declared under class 7605 but under classes 7111 and 7249.

When complete machines or equipment units are sent out in more than one shipment the shipper's export declaration for all shipments except the last should only the value of the portion of the machinery or units actually exported at the time, and the quantity column should be

U. S. TREASURY DEPARTMENT Customs Form 7525 T. D. 36410 C.D., June 23-25

No. _____

This space for use of Customs

UNITED STATES CUSTOMS SERVICE

☞ Read carefully the instructions on back to avoid delay at shipping point

SHIPPER'S EXPORT DECLARATION

OF SHIPMENTS TO FOREIGN COUNTRIES OR NONCONTIGUOUS TERRITORIES OF THE U. S.

☞ Clearance will not be granted until shipper's declaration has been filed with the Collector of Customs.
(Declaration should be typewritten or prepared in ink; pencil is not permissible.)

This space for use of Customs
No. _____
(Date No. Rec'd.) (Port.)

Goods shipped by Robert Blank Manufacturing Company (Name of actual shipper.)

Address 1483 (Number.) Front Street, (Street.) Milwaukee, (City.) Wis. (State.) For account of Same

Address (Number.) (Street.) (City.) (State.) From Milwaukee, Wis. (Place of original shipment.)

Via P. D. Q. R.R. (Carrier from interior point, if any.) For Shipment on the S/S Santa Monica (Name of carrier. If vessel, give name, motive power, and flag if known.) U.S.

From New York (U. S. Customs port of exportation if known.) To ultimate foreign destination of goods La Paz (City.) Bolivia (Country.)

Marks and numbers.	Number and kind of packages, e. g., 17 crates, 40 boxes, 60 cases, 75 bags, 90 barrels, etc.	COMMODITY. Describe the articles fully, as named part, printed cotton cloth, printing presses, engine, etc. General terms such as tinsels, dry goods, machinery, fruits, etc., will not be accepted. (See instructions on back, par. 8.)	Class No., Schedule B.	Quantity in standard export units, as pounds, tons (of 2,240 pounds), dozens, pieces, bushels, barrels, etc.	Value at time and place of shipment. U. S. Products. Including foreign goods allowed or remanufactured in the United States. Whole dollars (no cents).	Value at time and place of shipment. Foreign Products in same condition as imported.
	12 cases	Semi-Diesel engine	7142	1	$ 8,428	
M. Co.	10 cases	Mine hoists	7315	2	6,924	
ARICA	2 cases	Foundry molds	7449	640 lbs.	282	
in transito	15 cases					
para	3 crates	Belt conveyor	7249	1	3,450	
La Paz	1 reel					
#1-43						

Waybill or manifest No. _____ 192_ TOTAL, $ 19,084

I, the undersigned, solemnly and truly declare that the above statement is a complete, just, and true account of all merchandise shipped by the party named; on board the vessel, car, or vehicle; and to the place or country named above; and that the description and quantity of each article is truly stated and that the values thereof are the actual selling prices or true market values at the time and place of shipment for exportation.

Sworn and subscribed to before me (Signature) Ronald V. Jones

on January 3, 1926 (Capacity) Secretary (Member of firm, secretary, agent, etc.)

H. L. White (Deputy Collector, notary public, etc. See par. 2 on back.) (Address) Milwaukee, Wis.

SPECIMEN FORM OF THE PROPER DECLARATION OF EXPORTS

How Industrial Machinery for Export Is Classified

POWER-GENERATING MACHINERY, EXCEPT ELECTRIC AND AUTOMOTIVE

Class No.	Commodity	Unit of quantity
	Steam engines:	
7111	Stationary, except turbines	No.
7113	Mechanical-drive turbines	No.
7114	Locomotives	No.
7129	Other steam engines, parts and accessories	Lb.
7131	Boilers	Square feet heating surface
7134	Condensers, heaters, and accessories	Lb.
7139	Injectors, gages, safety valves, and other boiler accessories and parts	Lb.
	Internal-combustion engines:	
	Stationary and portable engines—	
7140	Gasoline locomotives	No.
7142	Diesel and semidiesel	No.
	Other—	
7143	Not over 10 horsepower	No.
7144	Over 10 horsepower	No.
7145	Marine engines—diesel and semidiesel	No.
7159	Parts and accessories for internal combustion engines	Lb.
7163	Water wheels and water turbines	No.

CONSTRUCTION AND CONVEYING MACHINERY

7201	Excavators, including power shovels	No.
7202	Excavator parts and accessories	Lb.
7205	Dredging machinery	Lb.
7215	Concrete mixers	No.
7220	Road rollers	No.
7225	Other road-making equipment	Lb.
7231	Other construction equipment	Lb.
7234	Cranes with swinging booms	No.
7235	Other cranes	No.
7239	Hoists and derricks, except mining	No.
7245	Elevators, freight and passengers	No.
7249	Conveyors, bucket, chain, or belt	No.
7291	Other conveying equipment	Lb.

MINING, OIL WELL, AND PUMPING MACHINERY

	Mining and quarrying machinery:	
7305	Coal cutters	No.
7311	Rock drills	No.
7315	Mine hoists and derricks	No.
7321	Ore crushing and sorting machinery	Lb.
7331	Concentrating and smelting machinery	Lb.
7339	Other mining and quarrying machinery	Lb.
	Oil well machinery:	
7341	Well-drilling apparatus	Lb.
7398	Other oil well machinery	Lb.
	Pumps:*	
7355	Centrifugal	No.
7358	Steam	No.
7361	Other power pumps	No.
7364	Pitcher pumps	No.
7365	Other hand and windmill pumps	No.
7368	Pump cylinders	No.
7369	Other parts of pumps	Lb.

*Not including service-station, gasoline pumps and tanks.

POWER-DRIVEN, METAL-WORKING MACHINERY

7400	Engine lathes	No.
	Engine lathes.	
	Bench lathes.	
	Automatic lathes.	
7402	Turret lathes	No.
	For chuck work.	
	For bar work.	
7403	Other lathes	No.
	Polishing, spinning, centering, cutting off lathes	
	Other lathes, not otherwise specified.	
7404	Vertical boring mills and chucking machines	No.
	Vertical boring mills.	
	Vertical automatic chucking machines.	
7406	Thread cutting and automatic screw machines	No.
	Thread cutting machines, rigid die type rotating die type.	
	Automatic turning machines, rigid tool type, rotating tool type.	
7407	Knee and column type milling machines	No.
	Knee and column, plain, power feed.	
	Knee and column, universal, power feed.	
	Knee and column, vertical, power feed.	
	Lincoln type.	
7408	Other milling machines	No.
	Automatic, continuous, station type, drum type, etc.	
	Cam milling, spline milling, thread milling, hand feed, etc.	
	Profiling, die-sinking, and engraving machines.	
7410	Disk type gear cutting machines	No.
	Cutting with disk cutters.	
7411	Other gear cutting machines	No.
	Cutting with hobs.	
	Generating types.	
	Other gear cutting machines.	
7420	Vertical drilling machines	No.
	Single spindle (vertical) drilling machines.	
	Multispindle (gang) vertical drilling machines.	
	Multispindle head drilling machines, vertical.	
	Automatic work feed drilling machines.	
7421	Radial drilling machines.	
	Radial drilling machines, horizontal or vertical.	
7422	Sensitive drilling machines (includes friction, bench, and other small-hole machines under three-eighths inch).	No.
	Electrically driven drills.	
	Pneumatically driven drills.	
	Sensitive, friction, bench, and other small-hole drilling machines (report number of spindles and amount).	
7423	Other drilling machines	No.
	Horizontal boring machines.	
	Blacksmith, wall and post mounted drilling machines.	
	Nut-tapping machines.	
	Other drilling and tapping machines not otherwise specified.	
7424	Metal sawing and cutting-off machines	No.
	Power hack-sawing machines.	
	Circular cold-sawing machines.	
	Band-sawing machines.	
	Other cutting-off machines not otherwise specified.	
7425	Shapers and slotters	No.
	Horizontal shapers.	
	Vertical shapers—slotters.	
	Other metal shapers.	
	Broaching and key-seating machines.	
7426	Planers	No.
	Double housing.	
	Open side.	
7440	External cylindrical grinding machines	No.
	External cylindrical grinders.	
	Universal cylindrical grinders.	
	Centerless grinders.	
7441	Internal grinding machines	No.
	Internal grinders.	
7442	Metal-working tool-sharpening machines	No.
	Drill grinders	
	Cutter, tool, and universal grinders.	
	Knife grinders.	
7443	Other metal-grinding machines	Lb.
	Surface grinder.	
	Disk grinders	
	Snagging grinders, floor stands, belt driven.	
	Snagging grinders, floor stands, motor driven.	
	Polishing and buffing, floor stands, belt driven.	
	Polishing and buffing, floor stands, motor driven.	
	Burnishing, lapping, and honing machinery.	
	Portable grinders, electric drive.	
	Portable grinders, pneumatic drive.	
	Portable grinders, flexible shaft drive.	
	Bench grinders (power driven), all kinds.	
7444	Sheet-metal working machines	Lb.
	Power stamping, forming, and punching presses.	
	Power shearing and trimming machines.	
	Hydraulic forming presses.	
	Power-driven corrugating and seaming machines, cornice brakes, bending machines, etc.	
	Other bending and forming machines for light sheet metal.	
7445	Plate metal working machines (similar to 7444, but for plates about one-eighth inch thick and up).	Lb.
	Plate punching and shearing machines.	
	Hydraulic forming presses.	
	Other plate-working machines.	
7446	Rod and wire working machines	Lb.
	Wire straightening machines.	
	Wire bending and forming machines.	
	Other wire and rod working machines not otherwise specifiied.	
7447	Forging machinery	Lb.
	Drop hammers.	
	Steam hammers.	
	Power hammers.	
	Hydraulic forging presses.	
	Power forging presses.	
	Swaging and upsetting machines.	
	Bull dozers and other hot-bending machines.	
	Electrical welding machines.	
	Bolt and nut forging and forming machines.	
	Riveting machines.	
	Other machines not rolling-mill machinery for forming hot metal.	
7448	Rolling mill machinery	Lb.
7449	Foundry and molding equipment (includes cupolas and accessories, molding machines, sand preparing equipment, riddles, tumbling barrels, etc.).	Lb.
7455	Other power-driven metal-working machinery and parts	Lb.
	All other power-driven machines for cutting and forming metal, not otherwise specified.	

OTHER METAL-WORKING MACHINERY

7456	Hand or foot operated metal-working machinery and parts.	Lb.
7457	Pneumatic portable tools	No.
7458	Other portable metal-working machines.	Lb.
7471	Chucks for machine tools	No.
7475	Reamers, cutters, drills, taps, dies and other metal-working tools.	Lb.

(Concluded on next page)

How Industrial Machinery for Export Is Classified

(Concluded from preceding page)

TEXTILE, SEWING, AND SHOE MACHINERY

	Textile machinery:	
7500	Circular hosiery knitting machines	No.
7501	Other circular knitting machines	No.
7504	Other knitting machines, and parts	Lb.
7511	Cotton carding machines	Lb.
7512	Cotton spinning and twisting machines	Lb.
7515	Cotton looms	Lb.
7519	Other cotton machinery	Lb.
7529	Wool carding and weaving machinery	Lb.
7539	Silk machinery	Lb.
7549	Other textile and textile-finishing machinery	Lb.
	Sewing machines:	
7551	For domestic use	No.
7552	For factory or industrial use	No.
7553	Parts of sewing machines	Lb.
7576	Shoe machinery, except sewing	Lb.

OTHER INDUSTRIAL MACHINERY

7605	Flour-mill and gristmill machinery	Lb.
7609	Rice-mill machinery	Lb.
	Sugar-mill machinery:	
7612	Cane mills	No.
7619	Other sugar-mill machinery	Lb.
7625	Paper and pulp mill machinery	Lb.
7631	Sawmill machinery	Lb.
7636	Planers, matchers, jointers, and molders	No.
7639	Other woodworking machinery	Lb.
7641	Blowers and ventilating machinery	Lb.
7645	Brewers' machinery	Lb.
7652	Ice-making equipment	Lb.
7653	Refrigerating equipment up to 10 tons refrigerating capacity	Lb.
7654	Refrigerating equipment over 10 tons refrigerating capacity	Lb.
7661	Oil-mill machinery	Lb.
7671	Cotton gins and parts of	Lb.
7690	Ball and roller bearings and parts of	Lb.
	Air compressors:	
7704	Capacity up to 25 cubic feet	No.
7705	Capacity over 25 cubic feet	No.
	Laundry machinery:	
7735	Domestic washing machines	No.
7737	Power laundry machines	No.
7738	Other laundry equipment	Lb.
7741	Gas meters	No.
7742	Water meters	No.
7750	Other industrial machinery and parts, n. e. s.	Lb.
7935	Station and warehouse motor trucks	No.
7967	Mine cars	No.

left blank. A statement as follows should be made on each of these declarations, after the description of the shipment:

"This declaration covers assembly parts for complete apparatus. Unit numbers will be recorded on the final declaration."

Unit numbers will be recorded on the final declaration and on it only. On the final declaration the number of machines or units must be put in the quantity column, and a statement as follows should be made after the description of the shipment:

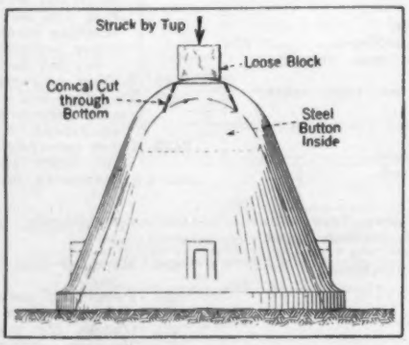
"This declaration covers assembly parts for complete apparatus for which declaration (s) was (were) made on (date). This is the declaration for the final shipment."

Using Torch To Remove Slag Ladle Plug

WHEN a heat of steel is tapped from the open-hearth furnace, it flows into a large ladle which has sufficient capacity for the metal only. Any slag which floats on the surface overflows into a smaller ladle alongside and is romoved to the slag dump. This overflow, however, contains a little metal which sinks to the bottom and each time the ladle is used a little more metal chills and is deposited there. After a while this plug or button becomes 15 to 18 inches thick and cuts down the capacity of the ladle to such a point that it must be removed or the ladle scrapped. Since the ladle itself is a conical pot of cast iron with heavy walls and a bottom often 7 inches thick, it is rather awkward to handle.

This plug can be removed by mechanical means, but the process is tedious and laborious. During recent years the oxyacetylene blowpipe has been employed and has made the job a comparatively simple one. In the December issue of *Oxy-Acetylene Tips* published by the Oxweld Acetylene Co., New York, appears an article describing the blow torch method and pointing out how the oxygen required can be held to a minimum.

According to this publication, a service operator in one of his periodic visits to a large eastern steel plant, found what semed to him to be a wasteful use of oxygen. Workmen were engaged in cutting out a button in the bottom of a slag ladle, taking an hour's time and approximately five cylinders of oxygen. Using proper methods, this operator demonstrated how the work could be done in 15 minutes with three-quarters of a cylinder of oxygen.

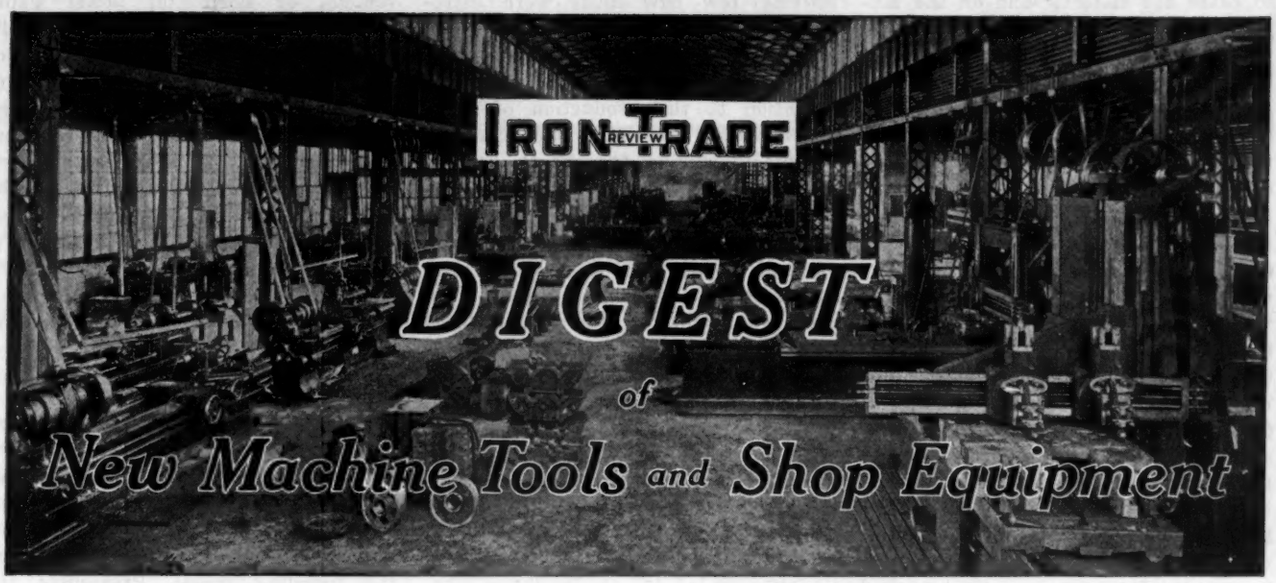


THIS SKETCH OF A SLAG LADLE SHOWS HOW THE STEEL BUTTON IN THE BOTTOM MAY BE DRIVEN OUT

The method which the service operator observed was as follows: An oxygen lance was rigged up and driven through the ladle bottom toward the edge of the plug. This hole was worked sidewise into a circular cut, the ladle then was turned upside down and the plug driven out by heavy sledging.

The revised method which was demonstrated is illustrated by the accompanying sketch. With the lance, a single hole was driven through the ladle bottom only to a depth of perhaps 7 inches. Using a cutting blowpipe, a semicircular cut was made starting from this original hole. The cut was inclined outwards at all times so that cut surface was conical and so adjusted that only the cast iron ladle bottom itself was penetrated, leaving the steel button solid underneath. Half of the cut being finished, the lance again opened up the starting hole at the bottom and the rest of the circumference of the conical plug was cut with the blowpipe.

Next the ladle was turned upside down, a square ingot end placed at the very top and was struck with a falling tup. This drove out both the button and wedge, cleaning up the ladle entirely. The wedge itself then was placed back in the ladle, the whole bottom plastered over with fireclay and a shallow pool of hot steel run in to prevent undue leakage until the button had a chance to build up again. As was mentioned previously, this method resulted in reducing oxygen consumption from five to three-fourths cylinders per ladle.



Safety a Factor in Selling Tools

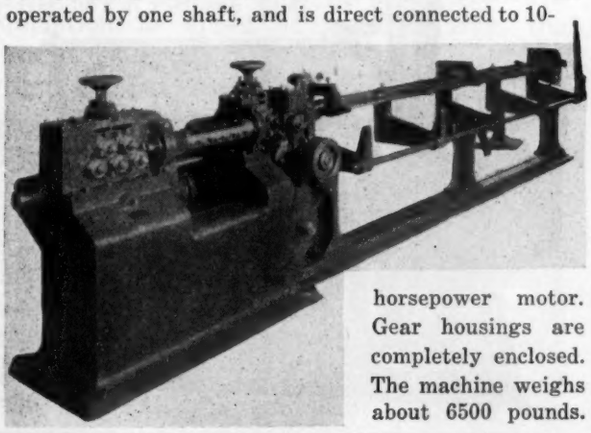
WHEN a man buys a new piece of equipment for his shop, he usually looks over several different makes. He wishes to perform some definite operation or series of operations and it is a matter of selecting the tool that will perform that work most efficiently. Some of the important factors contributing to the efficiency are power, cutting ability, accuracy, ease of control, flexibility, initial cost, cost of operation and safety.

Just what part safety plays in guiding a decision is not capable of determination, but it is an unconscious influence. One has but to recall machine tools of a few years ago to realize what has been accomplished in making equipment safe for the operator. No longer are belts unguarded so as

Unit Straightens and Cuts Wire

No. 41

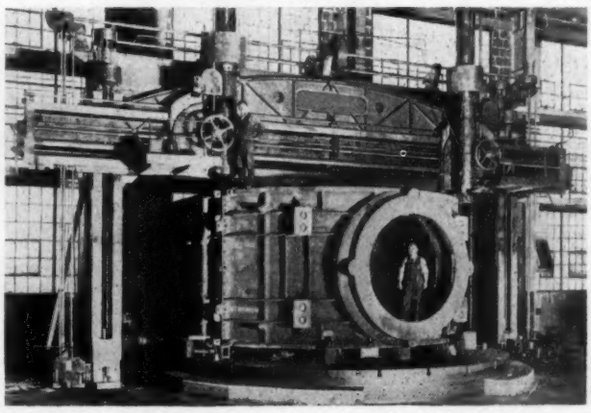
Hallden Machine Co., Thomaston, Conn., is manufacturing an automatic rotary straightening and cutting-off machine designed to operate on round wire from coil and to cut it into uniform lengths, depositing the straightened wire in a receiving tree. The flier has bell-shaped dies so the wire can be started without stopping the machine. Shearing mechanism is of the flying type, the shear timed with the feed rolls so as to move forward at the same speed as the wire. A one-revolution clutch of roll locking type engages instantly upon tripping, insuring uniformity of rod lengths. Tripping mechanism is of trigger type and operates under slight pressure, preventing bending of the wire. The machine is so designed that the seven roll straightener, flier, front feed rolls and shear are all operated by one shaft, and is direct connected to 10-horsepower motor. Gear housings are completely enclosed. The machine weighs about 6500 pounds.



Boring Mill Is Unusually Large

No. 42

Consolidated Machine Tool Corp., New York, recently has built a vertical boring machine designed for heavy duty cutting. The machine has a table 24 feet in diameter with a 32-foot 3-inch swing, 12½-foot height under tool holders, and a 10-foot spindle travel. Three mechanical speeds are provided through enclosed steel gears with a 75-horsepower variable speed motor and 3:1 reduction. Bed, table and uprights are unusually massive. Tool spindles are steel forged with screw feed and are balanced by means of ring type counterweights. A special motor driven pump forces oil to the annular bearings on the bed. Each saddle has an operator's platform with push-button motor control stations and levers for selecting horizontal and vertical feed or power rapid traverse.



to catch the clothing and on the majority of machines the use of individual motor drive has eliminated the belt altogether. Speed changes now are made through a quick-change gear box controlled by a simple lever. Formerly it was necessary to make belt shifts. It has now become standard practice to start and stop motors by means of push buttons which operate concealed switches. There is no danger of the operator coming in contact with electrical wires. At present it is not possible for cutting heads and tables to overrun their travel for limit switches disengage the power at proper times to prevent damage. Consequently, in addition to producing capacity, the buyer of a modern machine tool purchases two types of protection. One is protection of the equipment and the other is protection to personnel. It might properly be called insurance.

Safety Features Emphasized

It is to be expected, therefore, that manufacturers in describing new tools should emphasize safety features. In all announcements of new equipment appearing in IRON TRADE REVIEW'S digest, an attempt is made to set forth briefly all safety features which are of interest. During February, relatively few new units were introduced to the market but, as was suggested last month, builders probably are devoting most of their attention to the production of present models. On the whole sales of equipment during the month aproximated the average of 1925.

One of the largest pieces of equipment to be built recently is the large vertical boring mill, described as No. 42 in the accompanying digest. This mill was built by the Consolidated Machine Tool Corp., of America for the Westinghouse Electric Mfg. Co. In the accompanying illustration, it is shown machining a turbine casting weighting 197,900 pounds. The machine has a 24-foot diameter table with a 32-foot 3-inch swing, a 12½-foot height under the tool holders and a 10-foot travel to the tool spindles. Power is supplied by a 75-horsepower variable-speed motor. Three mechanical speed changes are provided through enclosed steel gears in connection with the 3 to 1 ratio of the motor, thus giving a wide range of table speeds.

Each saddle is equiped with an operator's platform from which all motors may be controlled by means of push-button stations. Levers for selecting vertical and horizontal feed, vertical or horizontal power rapid traverse, and for reversing the direction of either one, final hand adjustment both vertically and horizontally, also quick hand traverse to the tool spindles, all are controlled from this platform. Duplicate stationary levers are located on each side of the machine. A 25-horsepower motor mounted on top of the machine is used for raising and lowering the crossrail and of driving the power rapid traverse to the saddles and tool spindles.

Eliminate Belt Drive

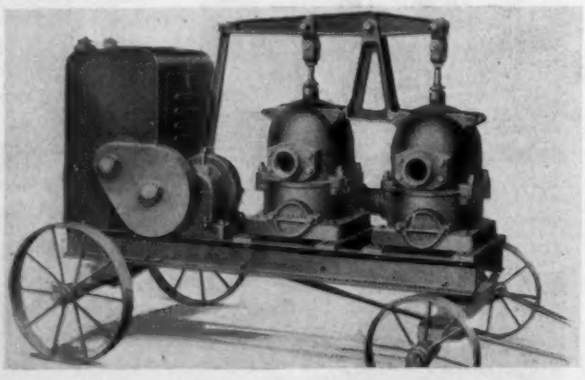
Notable improvement have been made to the 14 and 22-inch surface grinders made by Pratt & Whitney Co. The chief improvement of the new grinder, which is described as No. 46, is the method of driving the grinding wheel. Previously the spindle was belt driven but now it is motor driven with the motor mounted on a bracket cast in the rear of the top of the column. This motor drives the grinding wheel spindle directly through a right-angle drive using circular bevel gears. The 14-inch machine requires a 25-horsepower motor running at 1750 revolutions per minute and the 22-inch machine

(*Concluded on Page* 612)

Pumping Units of Diaphragm Type

No. 43

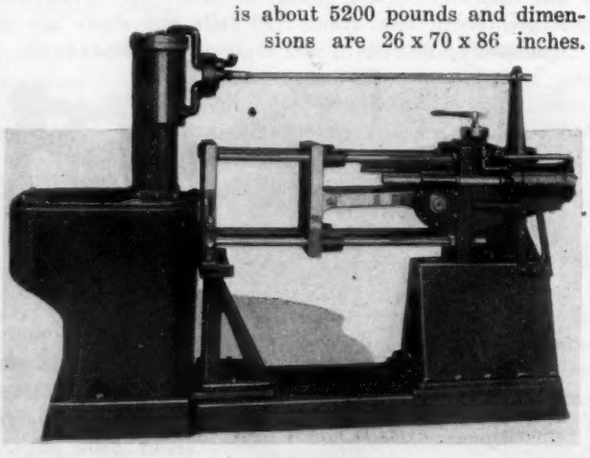
Novo Engine Co., Lansing, Mich., has placed on the market a new type diaphragm pumping outfit containing a self-oiling speed reducing unit which is powered by means of a 3-6 horsepower 2-cylinder engine, which was described and illustrated as No. 22 in the Jan 14 issue of IRON TRADE REVIEW. All gearing on the pump is enclosed and protected, thus affording operating conditions conducive to long life for wearing parts. The pump is surplus powered and smooth running, reducing to a minimum the strain upon engine and pump and lengthening the life of the outfit. Both single and double units are built in both open and closed types. This pump, being portably mounted on wheels as shown, is adapted to general construction work. This pump motor, as shown in the illustration, has a steel housing.



Die Casting Machine Is Improved

No. 44

Simplex Casting Machine Co., Detroit, is now manufacturing a new model of die casting machine which is semiautomatic air driven and uses oil, gas or electricity for keeping the melting pot at the proper temperature. Operation is controlled by two levers, one governing the carriage mechanism, the other the molten metal flow. Dies are water cooled to allow maximum production and life. Carriage power is derived from two air cylinders, one on each side of the machine, operating racks which revolve pinions on both ends of a crankshaft. The latter is direct connected to the die carriage. Pot capacity is 500 pounds of white brass. The air requirement is 100 cubic feet per hour. Weight of the machine is about 5200 pounds and dimensions are 26 x 70 x 86 inches.



Editorials

Keeping On Its True Job

ACTION of the senate last week in turning down the report of Senator Walsh from the judiciary committee concerning the proposed investigation of the Aluminum Co. of America indicates a swinging of the pendulum toward restricting the senate to the exercise of legislative rather than judicial and executive functions. This was Senator Walsh's first reverse in his policy of extending the senate's powers to make that body an inquisitorial court.

A further encouraging sign for business and industry of the country is the fact that the administration forces are able to withstand the fire of sensational attacks on the administration's attitude toward business without cringing. The vote developed that a number of Democrats certainly are not in accord with the attempts to stir up so-called "scandals" in the administration.

The attacks on the Aluminum company, apparently largely were political in their nature, and designed to embarrass the secretary of the treasury, and through him the national administration. After last week's developments, however, the signs indicate that the senate is ready to go quietly about its business of legislating.

No Drastic Recession in View

RECENT drastic reaction on the stock market has been taken by some as a warning sign for business. But Wall Street has frequently been known to bear false witness to industry and such not unlikely is the case this time. What has been happening is the reaping of the bitter harvest of over-speculation.

Last year and in recent weeks the stock market has been winging at altitudes unjustified by present business conditions. It seems clear that business is facing no drastic period of recession or liquidation, as might be gathered from the way stocks have fallen.

During the past three years trade has been swinging up in the spring, and slowing down in the summer. This cycle, largely a seasonal one, may be repeated this year. Any such downswing, from all present indications, will be similar to those of recent years. It will have nothing in common with that of 1920. There is no heavy surplus of stocks to be liquidated and no stringency of credit to be eased. Moreover, business has been moving with careful conservatism.

In this connection a statement made by the Brookmire Economic Service is of utmost current importance. It is to the effect that over a 35-year period studied, one fact stands out with striking clearness. This is that when a majority of factors indicate a downturn in business, as they do now, and credits remains easy, the downturn never is the nature of a drastic liquidation. There is considerable comfort in this conclusion.

Where Competition Is Intensified

SANCTION by the Illinois highway department of the use of rail steel for reinforcing concrete highways and bridges in that state is a mark of recognition which makers of rail steel doubtless will capitalize. Efforts to introduce the product in highway work in other states will follow, and further collision between rail and billet steel appears inevitable.

Rail steel as a concrete reinforcement has come to the front rapidly in the Chicago district. There, it is estimated, rail steel now accounts for almost half of the going tonnage in reinforcing bars compared with possibly 10 per cent two years ago. Rail steel bars have been underselling billet bars by $10 to $12 a ton.

Some billet bar warehouses in the Chicago district now are centering on mesh, spirals, forms, pans, metal lath and allied materials. Practically all are looking more to the collaterals of reinforcing work. Whether billet bar warehouses will meet the situation by handling rail steel themselves has been discussed but not decided.

The merits of rail and billet steel reinforcement always will be a matter of dispute between respective makers but there is no doubt that each has advantages for certain classes of work. It would seem to be to the better policy for each to cultivate its particular field and not deplete energy in neutral territory. Regardless of any activity on either side, rail and billet steel bars will survive or fall according to their intrinsic worth.

Sheetmakers Face Problems

REQUIREMENTS of the trade frequently dictate changes in methods of manufacturing rolled steel products. Until a few years ago common sheets answered for all commercial uses. Manufacturers of motor cars depended upon the paint brush, coats of filler and enamel to produce a finished job. Later body builders, recognizing the importance of surface finish in the original sheet, began to be more exacting in

their requirements. Within a span of a few years equipment designed to produce sheets with a smoother finish than could be obtained by ordinary hot mill practice began to be installed in various sections of this country. As a result considerable tonnage that formerly was filled by common sheet producers was diverted to the new entrants into the industry.

Last year rolling mill engineers installed a new type of mill in this country which again brings sheetmakers to the edges of their chairs. This mill, known as the cluster type mill affords close gage tolerances, large reduction per pass and large output, in addition to other advantages. While this particular installation has not yet been adapted to the rolling of steel sheets still the stage reached in mechanical development invites investigation. A mill, known as the backup mill and which employs the same rolling principle as the cluster mill, also engages attention. Its design permits rolling up to 18 gage and at a rapid rate. The product can be sold at plate prices. This mill also may be the means of diverting more tonnage from the common sheet industry.

Moreover, a sheet-strip mill to be built in the Pittsburgh district is designed to produce wider stock than now is made by stripmakers and stock in longer lengths than is possible by present commercial sheet mill practice.

The expenditure of large sums of money for such projects as mentioned is indicative of the fact that manufacturers have given some thought to future conditions. Applications of steel commodities are expanding right along and some of these, particularly where large tonnages are involved, frequently prompt manufacturers to take stock of their rolling equipment. This, in addition to economy, explains why certain sheet producers are scrutinizing the new developments in mill equipment.

Structural Market Reshapes Itself

IN THE sharp decline of structural bookings for January, recently reported by the department of commerce, is to be seen the influence of conditions prevailing in the New York metropolitan district. The country's total bookings fell from 75 to 59 per cent, equivalent to a drop of 21 per cent. The decline of bookings in the New York metropolitan district was considerably under that percentage; and as the New York district takes annually about one-quarter of the country's entire theoretical structural steel production, the reduction there assumes special importance.

The lull in New York, evidenced even in February, has been due chiefly to the readjustment of trading conditions in conformance with the policy of fabricators there, inaugurated last fall, of quoting only upon fully completed plans. Previously, business had been largely on a pound price basis, with estimates often based on sketchily designed plans. When fabricators organized and announced there would be a change in this method of bidding, effective at a nearby date, there was a rush of builders into the market. On some of the jobs, architects since have been busy completing plans.

Work of finishing plans on contracts let weeks ago and getting the new projects not only started, but completely finished has contributed largely to the lapse in the New York demand. There is evidence that much of this new work will come into the market this month. With New York assuming more nearly its relative position with other districts and with the spring season at hand, structural bookings for March should reflect a decided gain.

What Our Readers Are Thinking

Who'll Build Tomorrow's Railroads?

THE railroads are equipped to take care of the traffic of 1926, but will they be able to handle equally well the traffic of 1946, or even of 1936? This is a pertinent question today. It may seem strange to call attention in one breath to the immense volume of traffic moved by the railroads last year, which was within three-tenths of one per cent of that moved in the record year 1923, and in the next breath voice apprehension for the future of the carriers. But let us look below the surface.

The railroads of the United States, considered as a whole, have not earned the very modest return of 5¾ per cent on their investment in property devoted to transportation uses designated by the interstate commerce commission as "fair" in any year since congress recognized their right to such a return. Even with the record net operating income of 1925 there were 14 class 1 railroads which were operated at a loss. To give further emphasis to this disquieting fact I may say that five of these railroads were in the eastern district where traffic is densest.

Now, to cap the climax, observe that while gross earnings in the eastern district increased 3.7 per cent in 1925 over those for 1924, the railroads in the district were able to hold the increased expense of moving this larger volume of business down to six-tenths of one per cent.

The railroads have been able to reduce their operating ratio, this is, the percentage of gross revenues required to pay operating expenses, from 93.65 in 1920 to 73.34 in 1925. In the face of all this, they were able to earn on the increased business of last year only 4.83 per cent on their property investment.

One of the reasons was that owing to reductions in freight rates since 1920 the nation's freight bill was $800,000,000 less last year than it would have been at the rates in effect in 1920.—G. H. INGALLS, *vice president, traffic, New York Central Lines in address to Transportation club, Buffalo, Feb.* 24.

The Reader's Page

Vol. LXXVIII, No. 9 IRON TRADE REVIEW March 4, 1926

When Uncle Sam Serves As Reporter

A GREAT newspaper editor once said that half the mistakes that appear in newspapers can be traced to misstatements as to facts made to reporters by those who subsequently complain of the errors. Those who attempt to give information frequently do not have the facts; sometimes they do not know how to express them. Uncle Sam is a reporter, when he reports through various bureaus and their publications, the progress and statistics of industry. And he is liable to error in the same way the newspaper editor referred to his reporters. He cannot transmit correct information unless he receives it. Statistics relating to exports are of great importance to American business interests. The only information Uncle Sam has as to their classification, is the declaration made by the exporters. Read more about this on page 576.

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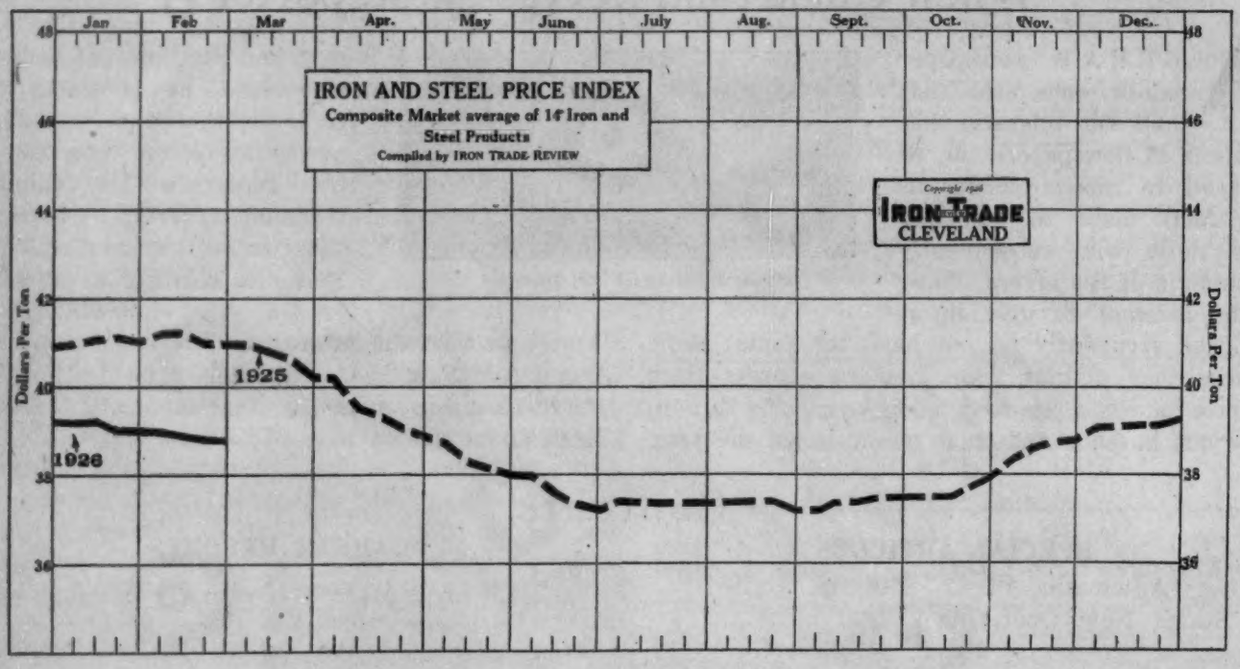
The Business Trend



Spring Stimulation Approaching

By JOHN W. HILL, Financial Editor

THE business world is groping for signs which will indicate the course of the industrial current. Some uncertainty and a deep-dyed conservatism have characterized the early weeks of the year. Buyers have held the whip hand. Yet consumption and activities in general have held well up to record levels for the season.

AT THE moment the situation is in a state of healthy balance. Supplies and demand about even up, with large capacities and swift railroad deliveries banishing thoughts of shortages. Fortunately, in most lines, there are no indications of accumulating stocks of unsold goods.

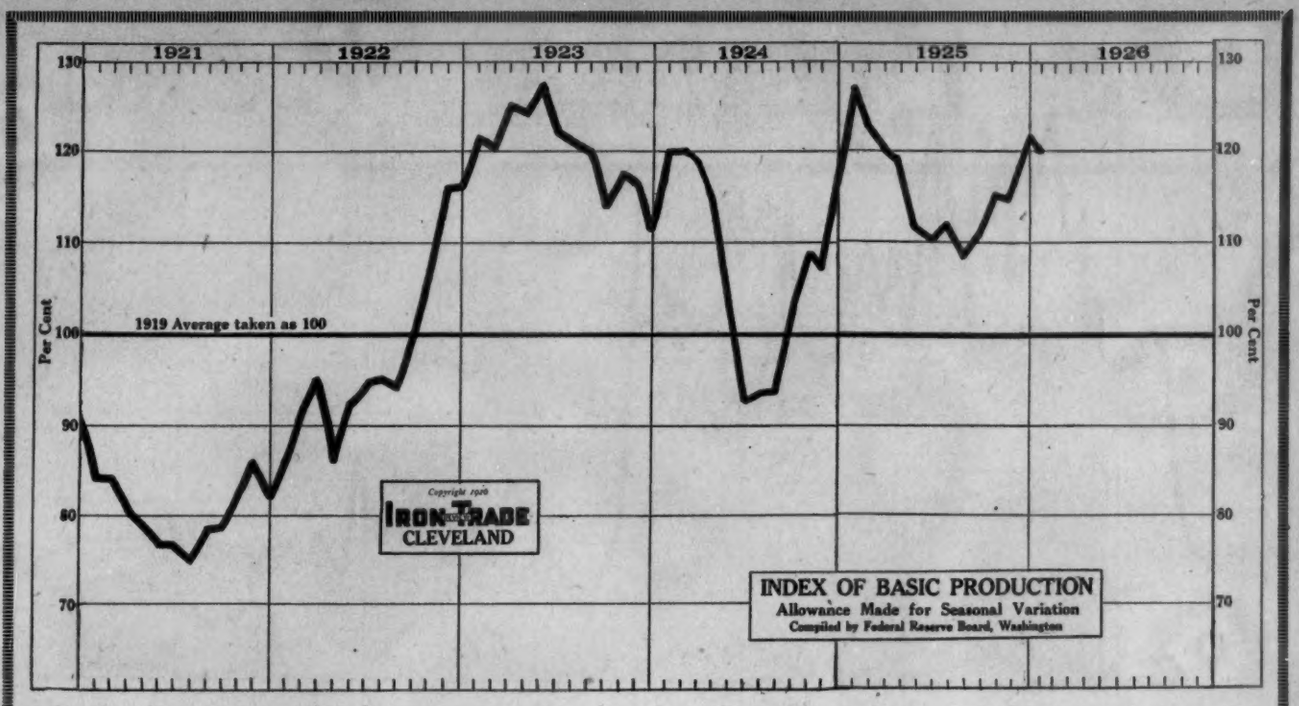
WHAT business men at the moment want to know is which way the balance wheel is going to turn. During March and April it seems probable that demand and consumption will quicken under the stimulation of spring. The appearance of open weather doubtless will stir up building, automobile, and miscellaneous activities to a higher pitch.

A NUMBER of signs are pointing to a little better demand for steel before long. One of these is the recent behavior of prices. As measured by IRON TRADE REVIEW'S composite market index, iron and steel quotations have been holding practically steady since the middle of February. This is in contrast to their weakness in the first weeks of the year.

SHARP advances for iron and steel, however, are not on the cards, in view of large outputs and rapid deliveries. But quotations should tend to hold their own in the immediate future. The one element of disappointment in the iron and steel trade is that prices are too low to insure comfortable profit margins. This is being offset in a measure by increased efficiency.

AFTER the spring spurt is over, be it great or small, another seasonal slowing down is probable. That has happened in three previous years and it promises to repeat. Because overproduction is lacking, inventories are not inflated, and money is easy, drastic reaction is most unlikely. Meanwhile the important job ahead is to gage the probable spring demand.

The Business Trend

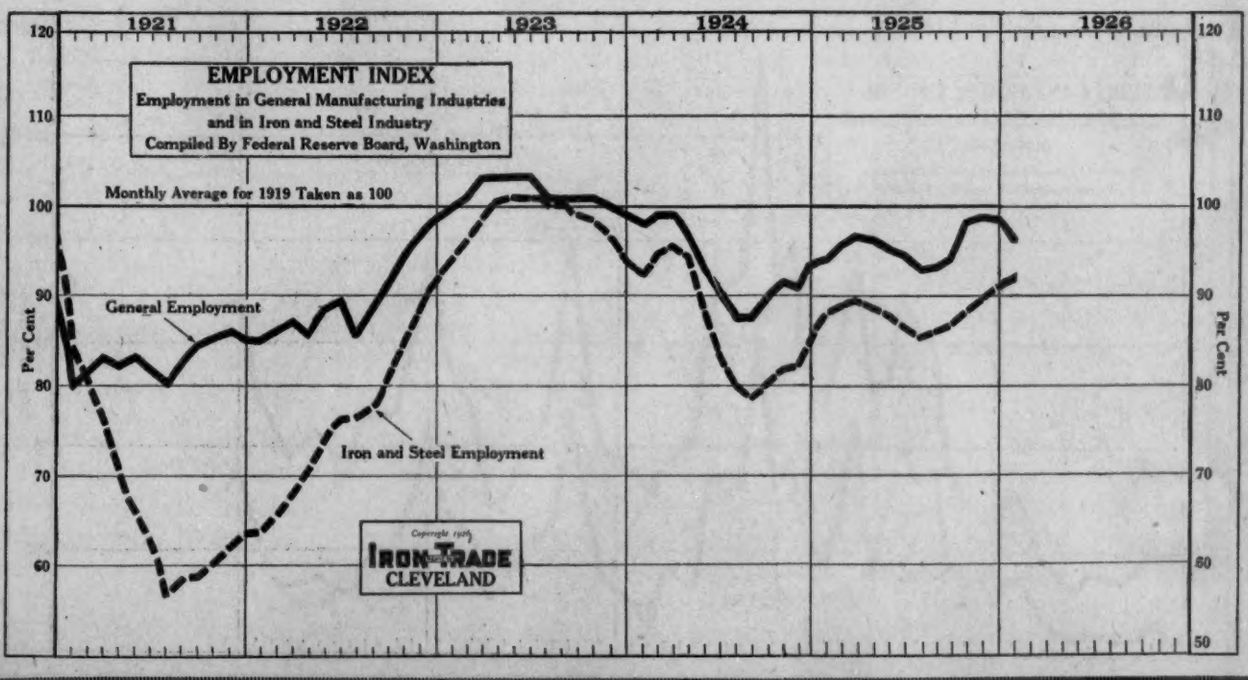


Basic Production

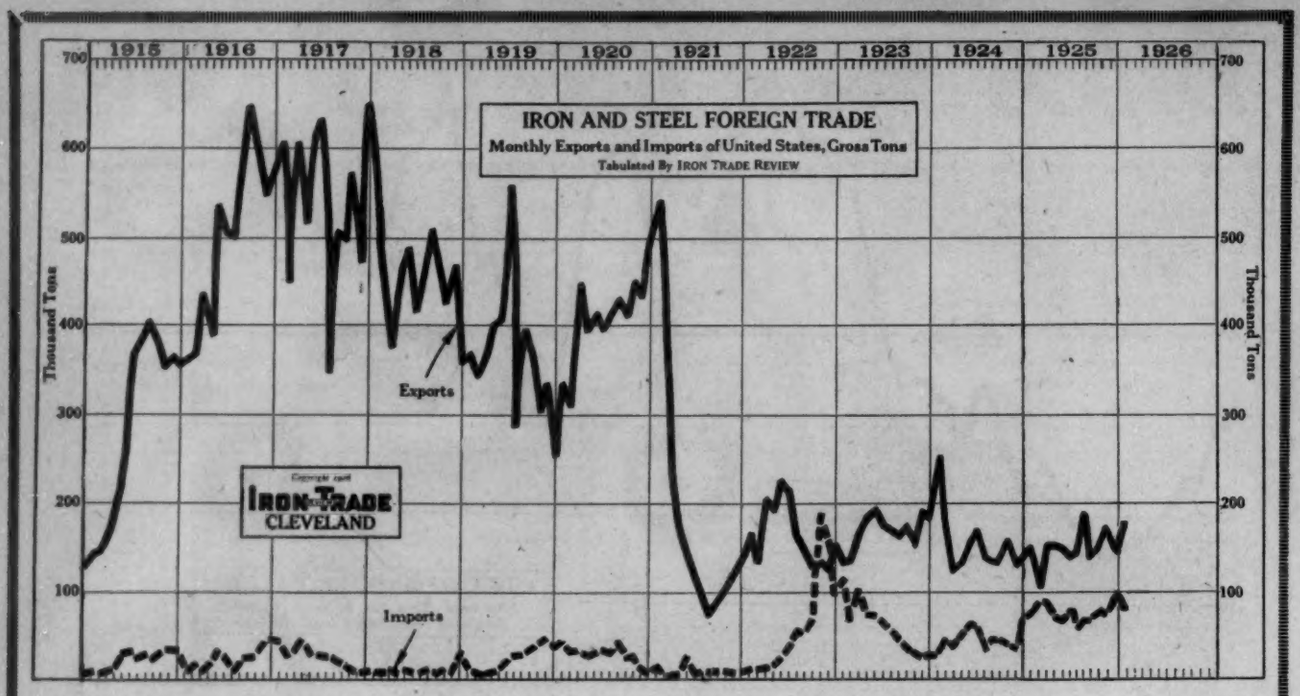
SEASONAL influences caused some abatement of industrial activity in January. The federal reserve board index of production in basic industries was about 1 per cent lower in January than in December. The index stood at 120 compared with 121 one month before and with 127 one year ago. The output of iron and steel, copper and zinc increased, while woolen and petroleum industries declined. Various other industries increased less than usual at this season of the year.

Employment Index

FACTORY employment as computed by the federal reserve board changed but slightly in January. The index of general employment for the month was 96.3 per cent of the 1919 average, compared with 97.1 per cent of the 1919 average in December. Employment in iron and steel mills gained a trifle in January, indicating better operations, the index standing at 91.9 per cent of the 1919 average compared with 91.6 per cent in December.



The Business Trend

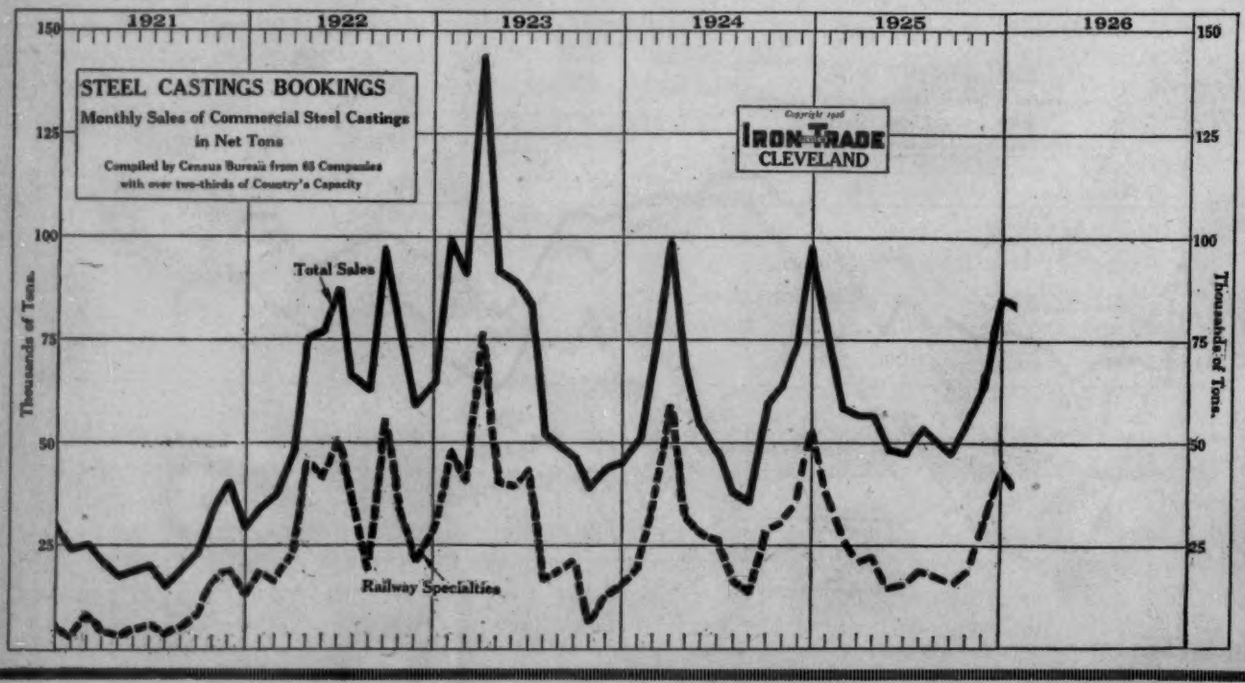

IRON AND STEEL FOREIGN TRADE
Monthly Exports and Imports of United States, Gross Tons
Tabulated By IRON TRADE REVIEW
1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926
700 600 500 400 300 200 100
Thousand Tons
Exports
Imports
IRON TRADE
CLEVELAND

Steel Foreign Trade

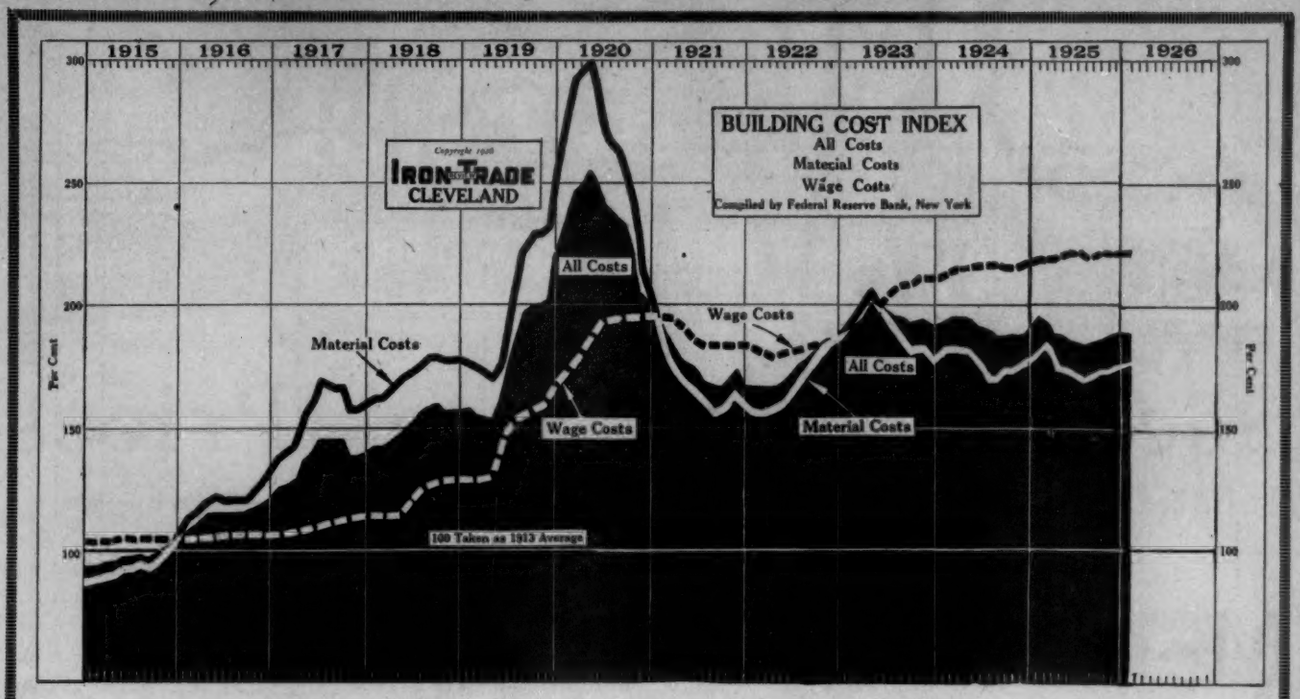
IMPORTS of iron and steel into the United States in January total 79,067 gross tons. This was 20 per cent reduction from the total of 98,548 tons imported in January. It was, however, slightly greater than the 77,065 tons in January, 1925. On the other hand, exports disclosed an important gain, with a total of 174,585 gross tons against 142,209 tons in December and 142,725 tons in January, 1925. The January total of exports was the highest for any month since January, 1924, except for last August.

Steel Castings

BOOKINGS of steel castings in January as reported by the department of commerce were 84,232 tons or 83.9 per cent of shop capacity. This compares with 85,397 tons in December or 85.1 per cent of shop capacity. In January, 1925, the bookings amounted to 82,922 tons, or 82.6 per cent of shop capacity. Railroad specialty bookings declined to 29,565 tons against 37,677 tons in December and 40,799 tons in January one year ago. Miscellaneous castings bookings also dropped.


STEEL CASTINGS BOOKINGS
Monthly Sales of Commercial Steel Castings in Net Tons
Compiled by Census Bureau from 65 Companies with over two-thirds of Country's Capacity
1921 1922 1923 1924 1925 1926
150 125 100 75 50 25
Thousands of Tons
Total Sales
Railway Specialties
IRON TRADE
CLEVELAND

The Business Trend

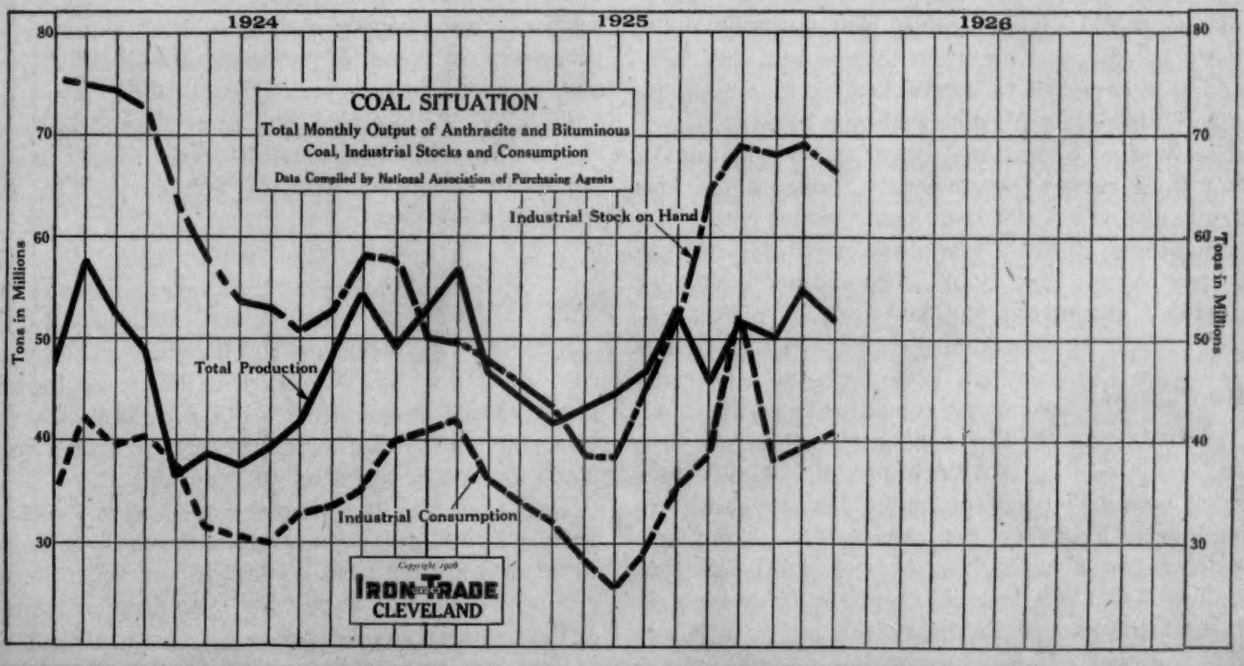


Building Costs

THE cost of building in the first weeks of 1926 was higher than it was last summer and about the same as it was 12 months before. Wages at 219 per cent of the 1919 average were at the highest level ever reached. All costs of building at 194 per cent of the 1919 average were unchanged from December and compared with 193 per cent of 1919 average in January, 1925. Material costs gained slightly in January to 178 per cent in 1919 against 177 per cent in December.

Coal Situation

DURING January, industrial consumption of coal showed a slight gain over the previous month according to statistics compiled by the National Association of Purchasing Agents. The estimated consumption of both bituminous and anthracite was 41,892,000 tons, against 39,040,000 tons in December. The total was approximately 3,000,000 tons below that of January, 1925. During the month industrial stocks of coal declined and production was lower.



Seek To Lift Steel Prices

Higher Schedule Put Out by Leading Mills on Plates, Shapes and Bars—New Business Shows More Signs of Spreading Out—Steelworks Operations Again Increase but February Pig Iron Output Falls

MORE earnest efforts to bolster up prices on steel which generally are unsatisfactory to producers, have followed the preliminary steps in this direction undertaken a week ago. The Steel corporation mills have brought out a new schedule on the principal heavy products of plates, shapes and bars and most of the leading independents have followed the same course. The new quotations now in effect reaffiirm steel bars and structural shapes at 2.00c and 1.90c Pittsburgh respectively, restore plates to a 1.90c basis and add $2 per ton in addition, to small lots of all three products.

The stiffer attitude of the producers comes at a time when fresh business is showing a renewed tendency to expand and the indifference and uncertainties of the past few weeks seem to be fading out. With spring in sight, new construction undertakings are shaping up more rapidly and the volume is favorable. The automobile industry is stepping up its activities and full production is expected to be reached by plants in the Detroit district in March, with one exception.

Steelworks operations have moved up again after their recent fluctuations. Chicago and Pittsburgh are on a 90 per cent basis while the Youngstown district has recovered from 75 to 80 per cent. The Steel corporation continues scheduled around 90 per cent.

Iron Output Lower

February pig iron production has further reflected the interruptions or reductions growing out of the coal strike. On a daily basis it dropped to 104,337 tons which was 2.57 per cent under January and was the lowest February rate since 1922. Total output for the shorter month was 2,921,449 tons against 3,319,789 tons in January. Furnaces in blast at the end of February fell by 2 to 223 or 58.5 per cent of the full number. However, this loss has been more than retrieved as three furnaces have gone in during the past few days and others are in line.

Roads Buying Steadily

The best element of railroad car buying is its steadiness. The past week's orders reach about 3500, the leading item being 2350 for the Illinois Central. This brings the total awards for February to around 13,000 or since Jan. 1 to about 22,000. This is three times the number ordered in the first two months of 1925. Locomotive inquiry is coming out more freely with more than 150 now pending. Indications point to the carrying out of heavy track maintenance programs especially by western systems. Chicago mills are being pressed to meet current specifications for rails.

Price raggedness is still apparent in sheets, especially black and special quality. The larger mills are maintaining a firm position but smaller producers in need of tonnage are making new and deeper concessions. Quotations of 3.15c and 3.20c Pittsburgh on black appeared this week. One lot of automobile body sheets is reported to have gone at 4.15c Pittsburgh. In other cases 4.30c was done.

New Work Is Active

With the 20,000 tons for the Cleveland Union station featuring, structural steel awards of the week are the heaviest of the year. They totaled 43,960 tons. Inquiry is active and is spreading. For concrete construction, the contracts for reinforcing bars this week were unusually large or 8690 tons.

Due to large line tonnage and better demand from jobbers, mill pipe production has been raised to 80 and 85 per cent. Tonnage for 100 miles of gas pipe placed by Japan has been divided between a Youngstown maker and a European mill.

Cast iron pipe makers are booked further ahead

at this date than a year ago as municipalities are coming out earlier with their requirements.

Dullness still is the chief characteristic of pig iron. Continuing active shipments by the furnaces indicating a well sustained melt, are likely to bring buyers into the market soon in considerable numbers. A Virginia pipemaker is inquiring for 10,000 tons. A round lot of basic was closed at $20 valley. Low quotations on Chicago iron are reported from St. Louis but there is no general weakness.

For the third consecutive week, IRON TRADE REVIEW composite of fourteen leading iron and steel products is unchanged at $38.90.

Prices, Present and Past

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	Mar. 3, 1926	Feb. 1926	Dec. 1925	Mar. 1925
PIG IRON				
Bessemer, valley, del., Pittsburgh	$22.76	22.76	22.76	23.86
Basic, valley	20.00	20.00	20.00	21.35
Basic eastern del., eastern Pa.	22.50	22.50	23.00	23.75
*No. 2 foundry, del., Pittsburgh	22.26	22.26	22.26	22.86
No. 2 foundry, Chicago	23.00	23.00	23.00	24.00
*Southern, No. 2, Birmingham	22.00	22.00	21.60	21.00
*Southern Ohio, No. 2 Ironton	21.00	20.60	21.10	21.60
**No. 2X, Virginia furnace	23.00	23.25	23.30	24.00
**No. 2X, eastern del. Phila.	23.51	24.01	24.26	24.51
Malleable, valley	20.50	20.50	20.50	21.25
Malleable, Chicago	23.00	23.00	23.00	24.00
Lake Superior charcoal, Chicago	29.04	29.04	29.04	29.04
Gray forge, val., del. Pittsburgh	21.76	21.76	21.76	22.36
Ferromanganese, del., Pittsburgh	119.79	119.79	119.79	119.79
*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.				
COKE				
Connellsville, furnace, ovens	3.00	7.45	4.00	3.35
Connellsville, foundry, ovens	4.25	6.50	5.10	3.85
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	36.00	36.00	36.60	38.50
Sheet bars, open-hearth, Pittsburgh	36.00	36.00	36.60	38.50
Billets, open-hearth, Pittsburgh	35.00	35.00	35.20	37.75
Wire rods, Pittsburgh	45.00	45.00	45.40	48.00
FINISHED MATERIAL				
Steel bars, Pittsburgh	2.00	2.00	2.00	2.10
Steel bars, Chicago	2.10	2.10	2.10	2.20
Steel bars, Philadelphia	2.32	2.32	2.32	2.42
Iron bars, Philadelphia	2.22	2.22	2.22	2.28
Iron bars, Chicago, mill	2.00	2.00	2.00	2.10
Beams, Pittsburgh	1.90	1.90	1.95	2.10
Beams, Philadelphia	2.17	2.17	2.17	2.32
Beams, Chicago	2.10	2.10	2.10	2.30
Tank plates, Pittsburgh	1.85	1.85	1.90	2.05
Tank plates, Philadelphia	2.12	2.12	2.07	2.37
Tank plates, Chicago	2.10	2.10	2.10	2.30
Sheets, black, No. 28, Pittsburgh	3.25	3.35	3.35	3.45
Sheets, blue anl., No. 10, Pittsburgh	2.50	2.50	2.50	2.65
Sheets, galvanized, No. 28, Pittsburgh	4.60	4.60	4.60	4.70
Sheets, black, No. 28, Chicago	3.50	3.50	3.50	3.75
Sheets, blue anl. No. 10, Chicago	2.65	2.65	2.65	2.85
Sheets, galvanized, No. 28, Chicago	4.75	4.75	4.75	4.90
Wire nails, Pittsburgh	2.65	2.65	2.65	2.85
Wire nails, Chicago	2.70	2.70	2.70	3.00
Tin plate per base box, Pittsburgh	$5.50	5.50	5.50	5.50
OLD MATERIAL				
Heavy melting steel, Pittsburgh	17.50	17.60	19.00	18.25
Heavy melting steel, eastern Pa.	15.75	16.35	17.65	16.25
Heavy melting steel, Chicago	14.25	13.75	15.50	16.70
No. 1 wrought, eastern Pa.	18.00	18.00	18.75	19.50
No. 1 wrought, Chicago	14.50	14.40	15.40	16.65
Rails for rolling, Chicago	16.50	16.30	18.55	18.15

Composite Market Average

The Fourteen Leading Iron and Steel Products Included are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (March 3, 1926)	$38.90
Last week (Feb. 24, 1926)	38.90
One month ago (February, 1926)	38.95
Three months ago (December, 1925)	39.14
One year ago (March, 1925)	40.70
Ten years ago (March, 1916)	37.18
Thirteen years ago (March, 1913)	27.93

Late News Flashes

Chicago Adds Some Capacity

Chicago, March 2.—Illinois Steel Co. has blown in another stack at its South Chicago works, giving it 20 of its 27 steel works stacks active. Steel ingot operations in this disthict are a shade higher and probably average 90 per cent.

Pittsburgh Production Moves Up

Pittsburgh, March 2.—Steelmaking in the Pittsburgh area is improving somewhat and the average is nearer 90 per cent than 85, as was the case recently. While barmaking is practically on a 100 per cent basis, plates and shapes are at 75 per cent average.

Report Gary Wire Mill Planned

Chicago, March 2.—A New York report today that the American Steel & Wire Co. plans the erection of a large wire plant at Gary lacks positive confirmation here. Chicago officials state plans for a Gary plant were vaguely talked ten years ago and believe ultimately such a works will be built at Gary. They disclaim, however, any knowledge of definite plans.

Puddlers' Wages Set for March-April

Youngstown, March 2.—Puddlers' wages in bar mills represented by the Western Bar Iron association will be $11.38 a ton in March and April, compared with $11.13 in January and February, according to the bi-monthly settlement today. Wages of finishing mill workers will be advanced 2½ per cent. The average of sales prices of bar iron in January and February was 2.00c a pound, an advance from 1.95c, and the first since last July.

American Mills Get Japanese Rails

Washington, March 2.—Despite the world-wide publicity campaign, promoted abroad, to discredit American steel products, rail makers of the United States have won a decided victory in obtaining an order for 30 miles of 90-pound rails or about 6000 tons for a Japanese electric railway, according to Dr. Julius Klein, director of foreign and domestic commerce of the department of commerce. In specifying American rails, it is understood the purchasers prefer to take no chances on European basic-bessemer rails, despite the higher price of the former. Delivery within the time limit also was a factor.

Preference for American open-hearth rails is further shown by a recent order from the South Manchurian railways for 5000 tons of 80-pound rails on which a premium is said to have been paid. American mills have supplied Japanese railways with over 1,000,000 tons of rails since they entered the market 30 years ago.

Current Rolled Steel Prices

PRICES, CENTS PER POUND, UNLESS OTHERWISE STATED

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS

4 x 4-inch base

Pittsburgh, open-hearth	$35.00
Pittsburgh, bessemer	35.00
Youngstown	35.00
Philadelphia	40.30 to 41.30
Chicago	35.00
Forging, Pittsburgh	41.00
Forging, Philadelphia	45.30 to 46.30

SHEET BARS

Pittsburgh	36.00
Youngstown	36.00

SLABS

Pittsburgh	35.00
Youngstown	35.00

WIRE RODS

¼-inch and finer

Pittsburgh	$45.00
Cleveland	45.00
Chicago	46.00

Standard extras, $2.50 per ton over ⅜-inch; $5 for screw stock; $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

Grooved skelp, Pittsburgh	1.85c to 1.90c
Universal skelp, Pittsburgh	1.85c to 1.90c
Sheared skelp, Pittsburgh	1.85c to 1.90c

Structural Shapes

Pittsburgh	1.90c
Philadelphia	1.96c to 2.32c
New York	2.14c to 2.34c
Chicago	2.10c
Cleveland	2.09c to 2.19c
Birmingham	2.05c to 2.15c

Steel Plates

Pittsburgh	1.80c to 1.90c
Philadelphia	2.12c
New York	2.14c
Chicago	2.10c
Cleveland	1.99c to 2.09c
Birmingham	1.95c to 2.05c

Iron and Steel Bars

Pittsburgh, soft steel	2.00c
Pittsburgh, cold finishing	2.15c
Pittsburgh, forging quality	2.15c
Philadelphia, soft steel	2.32c
New York, soft steel	2.34c
Chicago, soft steel	2.10c
Cleveland, soft steel	2.19c
Birmingham, soft steel	2.15c to 2.25c
San Francisco, soft steel	2.60c
Pittsburgh, refined iron	3.00c to 4.50c
Pittsburgh, reinforcing billet	2.00c
Youngstown, reinf. billet, base	1.90c to 2.00c
Chicago, rail steel	2.00c
Mill rail steel	1.85c to 1.95c
Philadelphia, common iron	2.22c
New York, common iron	2.24c
Chicago, common iron	2.00c

Hoops, Bands Strips

Hoops, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh over 6 in.	2.30c
Hot rolled strip steel, Pittsburgh stamping quality	2.30c to 2.50c
Hot rolled strip steel, Chicago	2.50c to 2.60c
Bands, Chicago, under 6 inches	2.60c
Bands, Chicago, 6 in. and over	2.50c
Cold rolled strip steel, hard coils, 1⅛ inches and wider by 0.100-inch and heavier, base, Pittsburgh, Cleveland	3.90c
Worcester, Mass., Chicago	4.05c to 4.15c

Cold Finished Steel

Cold finished steel bars, drawn, or rolled Pittsburgh, Chicago carloads	2.50c
Less carload	2.75c
Steel shafting turned and polished Pittsburgh, Chicago	2.60c

Screw stock base Cleveland $1 higher; and Worcester $3 higher than Pittsburgh and Chicago.

Hot Rolled Alloy Steel

Pittsburgh or Chicago

S. A. E. Series—	
2000 (3½ per cent nickel)	4.60c
3100 (Nickel chromium)	3.60c
6100 (Chrome vanadium)	4.40c
6150 (Chrome vanad. spring)	5.85c
9250 (Silico-mang. spring)	3.25c to 3.40c

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-h'th rails, mill	43.00
Relaying rails, St. Louis	24.00 to 31.00
Relaying rails, Pittsburgh	27.00 to 30.00
Light rails, 25 to 45 mill g.t.	35.00
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.80c
Spikes, small railroad, 7-16-inch and smaller, Pitts	3.00c to 3.10c
Spikes, boat and barge, Pitts.	3.25c
Spikes, railroad, Chicago	2.90c to 3.00c
Track bolts, Pitts. standard	3.90c to 4.15c
Track bolts, Chicago	3.90c to 4.15c
Tie plates, Pittsburgh	2.35c
Tie plates, Chicago	2.25c

Wire Products

To Jobbers in Carloads

F.o.b. Cleveland and Pittsburgh base

Wire nails	2.65c
Galv'd nails smaller than 1-inch	4.90c
Galv'd nails, 1-inch and over	4.65c
Plain wire	2.50c
Annealed wire	2.65c
Galvanized wire No. 9 gage	3.10c
Barbed wire, painted	3.10c
Barbed wire, galvanized	3.35c
Polished staples	3.10c
Galvanized staples	3.35c

Coated nails, 100 pound kegs, subject to card of extras Feb. 1, 1926 over regular wire nail base.

Woven wire fencing (retailers) 12½ gage, 26-in. high 7-in. bars and 12-in. stays, per 100 rods, f.o.b. Pitts. $20.03

Joliet, DeKalb and Waukegan, Ill., and Anderson, Ind., prices $1 per ton over Cleveland-Pittsburgh base on products made there; Chicago $1 higher; Duluth $2 higher and Worcester, Mass., and Fairfield, Ala., $3 higher.

Sheets

SHEET MILL BLACK

No. 28, Pittsburgh, base	3.20c to 3.35c
No. 28, Philadelphia, delivered	3.67c
No. 28, Gary, Indiana Harbor	3.45c
No. 28, Chicago delivered	3.50c

TIN MILL, BLACK

No. 28, Pittsburgh	3.25c to 3.35c
No. 28, Gary base	3.45c

GALVANIZED

No. 28, Pittsburgh, base	4.50c to 4.60c
No. 28, Philadelphia, delivered	4.92c
No. 28, Gary, Indiana Harbor	4.70c
No. 28, Chicago, delivered	4.75c

BLUE ANNEALED

No. 10, Pittsburgh, base	2.45c to 2.50c
No. 10, Philadelphia, delivered	2.82c
No. 10, Gary, Indiana Harbor	2.60c
No. 10, Chicago, delivered	2.65c

AUTOMOBILE SHEETS

No. 22, Pittsburgh, base	4.40c

Tin and Terne Plate

Prices per 100-pound box, Pittsburgh

*Tin plate, coke base	$5.50

Gary, Ind., base 10 cents higher.

Long ternes, base	4.85

*This price is subject to quantity differentials established by individual regulations.

Iron and Steel Pipe

Base Discounts Pittsburgh and Lorain, O. to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel	62	50½
1 to 1½-inch, butt iron	30	12

Indiana Harbor, Ind., and Evanston, Ill., 2 points less and $4 per ton higher. Chicago delivered 2½ points less and $5 per ton higher.

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional—F.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	38½
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled, 3¼ to 8½-inch	46 off

Chain, Piling, Cut Nails

Chain, 1-in. proof coil, Pitts.	6.00c
Sheet piling base, Pittsburgh	2.25c to 2.30c
Cut nails, c. l., f.o.b. mills	2.30c

Cast Iron Water Pipe

Prices per net ton

Class B Pipe

Four-inch, Chicago	$53.20 to 54.20
Six-inch and over, Chicago	49.20 to 50.20
Four-inch, Birmingham	45.00
Six-inch and over, Birmingham	41.00 to 42.00
Four-inch, New York	56.50 to 57.60
Six-inch and over, New York	51.50 to 52.60

Standard fittings, Birmingham base $110.00, 6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $5 higher than Class B

Nuts and Bolts

F.o.b. basing points, Pittsburgh, Cleveland, Birmingham and Chicago.

Hot pressed square tapped or blank	$4.00 off list
Hot pressed hexagon tapped or blank	$4.40 off list
Cold punched square or hexagon blank	$4.10 off list
Cold punched square or hexagon tapped or blank	$4.10 off list

Cold punched U. S. S. semifinished hexagon nuts ⅝-inch and larger 75, 10 and 5 off

Cold punched U. S. S. semifinished hexagon nuts 9/16-inch and smaller 80, 10 and 5 off

Cold finished S. A. E. semifinished ⅝-inch and larger 75, 10, 10 and 5 off

Cold finished S. A. E. semifinished 9/16-inch and smaller 80, 10, 10 and 5 off

CARRIAGE BOLTS

(⅜ x 6-inch, smaller and shorter)

Rolled thread	50, 10 and 10 off
Cut thread (all sizes)	50 and 10 off
Eagle carriage bolts (Eagle list)	65 and 10 off

MACHINE BOLTS

(⅜ x 4-inch, hot pressed nuts)

Rolled thread	60 and 10 off
Cut thread (all sizes)	50, 10 and 10 off

(All sizes cold punched nuts)

Cut thread	45, 10 and 5 off
Lag screws	60, 10 and 10 off
Plow bolts Nos. 3 and 7 heads	50 and 10 off
All other standard heads	50 and 10 off plus 20 per cent
Tap bolts	30 off
Bolt ends with hot pressed nuts	50, 10 and 10 off
Bolt ends with cold punched nuts	45, 10 and 5 off
Blank bolts	50, 10 and 10 off

Rough stud bolts with nuts (250 pieces or more of a size) 40 and 10 off

Stove bolts, 80, 10 and 5 off plus 2½ off in bulk.

Tire bolts	60 and 5 off

SEMIFINISHED CASTELLATED AND SLOTTED NUTS

Per 1000, f.o.b. producer's plant, freight allowed

	S.A.E. Castellated	U.S.S. Slotted
¼	$ 4.40	$ 4.40
5/16	5.15	5.15
⅜	6.20	6.60
7/16	7.90	9.00
½	10.10	10.50
9/16	13.80	14.20
⅝	17.00	17.30
¾	23.50	24.00
⅞	36.00	36.00
1	55.50	58.00
1⅛	89.00	89.00
1¼	126.00	131.00
1⅜	183.50	183.50
1½	210.00	210.00

Larger sizes—Prices on application

HEXAGON CAP SCREWS

Milled	80 and 10 off
Upset	80, 10 and 10 off

SQUARE HEAD SET SCREWS

Milled	80 and 5 off
Upset	80, 10 and 5 off

Rivets

Structural rivets, carloads, Pittsburgh and Cleveland	2.50c to 2.60c
Structural rivets, carloads, Chicago	2.75c
**Rivets, 7/16-inch and smaller Pittsburgh Cleveland	70 and 10 to 70 and 5 off
**Rivets, 7/16 inch and smaller Chicago	70 and 10 to 70 and 5 off

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

Washers

Wrought c.l., Chicago dist.	$6.30 to 6.40 off
Wrought c.l., Pitts. dist	6.25 off
Lock Washers, f.o.b. factory	85 off

Pig Iron

Market Is Quiet, With Shipments Continuing at Steady Rate—Prices Easier in Some Districts

DEMAND for pig iron during the week has not been large enough to strengthen the market or to indicate a definite trend. Producers believe the situation still is favorable to them. Shipments are going forward at a satisfactory rate, and while they apply on contracts for this quarter, furnace interests believe they denote a continuation of the melt on a fairly large scale. Cleveland sellers are offering $21.50, base, 50 cents below the price a week ago. Low offerings by Chicago furnaces in outside territory has made for an easier market. Some Buffalo furnaces are quoting $21, against $22. A round lot of basic was placed at $20, valley. Recent freight rate reductions on pig iron in Central territory will be canceled May 1, pending a new revision.

PITTSBURGH, March 2.—Continued quietness in the pig iron market is somewhat disconcerting to sellers. Some are finding it duller now than ever before. One producer sold two carloads of bessemer at $21, valley, and two carloads of malleable at $20.50, valley, last week. Another sold 100 tons of basic at $20, valley, and one lot of high-silicon foundry at $21, equivalent to $20.50 for the base grade. A few other sales of foundry iron at $20.50, base, are noted. One unidentified inquiry for 1000 tons of foundry iron was received by a steelworks interest, and is understood to be reciprocal in character. Most iron in brokers' hands is cleaned up, and due to heavy shipments furnace yard stocks are depleted. Included in the list of customers expected to inquire soon for second quarter requirements are the Westinghouse Electric & Mfg. Co. for Trafford City, Pa., and the Standard Sanitary Mfg. Co. for various plants.

Bessemer and basic averages compiled by W. P. Snyder & Co., are unchanged from those of a month ago, namely $21 and $20, respectively.

Boston, March 2.—Pig iron sales are confined almost entirely to orders for prompt delivery. A Massachusetts manufacturer bought 300 tons of No. 2X (2.25 to 2.75 silicon) from an eastern Pennsylvania furnace at $22.25 furnace, or $25.90 delivered. Sales from Buffalo furnaces are reported at $21, furnace. Several attractive inquiries are pending. Foreign iron is selling at $21, f.o.b. cars, Boston.

Philadelphia, March 2.—Several thousand tons of basic and about 1500 tons of low phosphorus iron was sold by eastern makers in the past week. Sales of foundry iron were restricted to prompt lots. No interest is noted here in the second quarter. The market is easier, at $22 to $22.50, base eastern Pennsylvania furnace. A Virginia pipemaker is inquiring for 10,000 tons of Virginia foundry iron for second quarter.

Buffalo, March 2.—New inquiry for pig iron is estimated at 10,000 to 12,000 tons, including one lot of 3000 tons and another of 2000 tons of foundry iron; one for 2000 tons of foundry and malleable, and one or two 1000-ton lots. Some makers who are practically sold for this quarter are asking $22, and are trying to establish that price for second quarter, but without much success. Others are quoting $21, base, for second quarter.

Cleveland, March 2.—Business in the pig iron market is not sufficiently important for the present to develop a price trend. About 10,000 tons in small lots was booked during the week by furnace interests with headquarters here, mainly for prompt delivery. The former levels of $20.50, valley, and $22, lake furnace, applied on these. A few carloads of foundry iron were sold at $21.50, Cleveland furnace, or 50 cents under the price of a week ago. It is understood that a round lot of basic iron was placed with a valley interest at $20, furnace, delivery beginning this month and extending into next quarter. Order books for the second quarter are lean, and inquiry does not indicate the approach of a buying movement. The total is about 5000 tons, including one lot of 3000 tons of foundry and low phosphorus iron for a northern Ohio melter for immediate delivery. Shipments continue on a satisfactory basis. The fact that railroads in northern and southern Ohio that reduced their rates Jan. 1 have decided to restore the former levels May 1, pending a more balanced revision, has led some melters to specify more liberally to get under the wire. A few carloads of silveries have been placed in this district at the current Jackson county quotations. The Hanna B stack at Detroit has been blown out for thin relining, and is expected to be back in operation at an early date.

The McKinney Steel Co. has relighted one of its stacks at Cleveland, and its Josephine furnace at Josephine, Pa. Two of its four Cleveland stacks now are active.

Chicago, March 2.—Buying of pig iron for second quarter is light. That the melt is not decreasing is evidenced by the fact one seller's daily average shipments in February topped those of January. It does not appear that the level of $23, Chicago furnace, for malleable and No. 2 foundry has been broken, but this price has not been tested for the second quarter. The Milwaukee producer is quoting $23, Milwaukee furnace. The unsettlement of basic and foundry prices at St. Louis and in southern Illinois has not contributed to a stable feeling concerning Chicago prices. Federal B stack, blown out Feb. 5 for relining above the bosh, is about to be blown in.

Cincinnati, March 2.—The condition

Pig Iron Prices

Prices per gross ton

Bessemer, valley	$21.00
Bessemer, Pittsburgh	22.76
Basic, valley	20.00
Basic, Pittsburgh	21.76
Basic, Buffalo	20.00 to 20.50
Basic, del., eastern Pa.	22.50
Malleable, valley	20.50
Malleable, Pittsburgh	22.26
Malleable, del., Cleveland	22.00 to 22.26
Malleable, Chicago	23.00
Malleable, Buffalo	21.00
Malleable, del., eastern Pa.	23.25 to 24.00
No. IX, eastern del., Phila.	23.50 to 24.76
No. IX, Buffalo	22.50 to 23.50
No. 1 foundry, Chicago	23.50
No. 2 foundry, valley	20.50
No. 2 foundry, Pittsburgh	22.26
No. 2 foundry, Buffalo	21.00
No. 2 foundry, Chicago	23.00
No. 2 foundry, Granite City	23.50 to 24.00
No. 2 foundry, Ironton fur.	21.00
No. 2 foundry, del., Cleveland	22.00 to 22.26
No. 2 foundry, del., Phila.	22.76 to 23.39
No. 2 foundry, N. J., tidewater	23.39 to 23.76
No. 2X, eastern del., Phila.	23.26 to 23.89
No. 2X, east, N. J., tidewater	23.89 to 24.26
No. 2X, foundry, Buffalo, furnace	21.50
No. 2X, eastern del., Boston	25.65 to 26.65
No. 2X, Buffalo, del., Boston	25.91 to 26.91
Continental foundry f.o.b. Boston	20.50 to 21.50
India, 2.25 to 2.75 silicon, delivered cars, Boston	21.00 to 22.00
No. 2 Alabama, Birmingham	22.00 to 23.00
No. 2 Alabama, Cincinnati	26.69
No. 2 Tenn., Birmingham	21.50
No. 2 Tenn., Cincinnati	25.19
No. 2 southern, Philadelphia	27.01 to 28.01
No. 2 southern, Chicago	28.01
No. 2 southern, Chicago (barge and rail)	26.18
No. 2 southern, Boston (rail and water)	27.91 to 28.91
No. 2 southern, Cleveland	27.01 to 28.01
No. 2 southern, St. Louis	25.42 to 26.42
No. 2X, Virginia, furnace	23.00 to 23.25
No. 2X, Virginia, Phila.	28.17 to 28.42
No. 2X, Virginia, Jersey City	28.54 to 28.79
No. 2X, Virginia, Boston	28.92 to 29.17
Gray forge, eastern Pa.	22.50 to 23.00
Gray forge, val. del. Pitts.	21.76
Low phos., standard, valley	28.00 to 28.50
Low phos., standard, Phila.	24.76 to 27.79
Low phos., Lebanon, furnace	23.00 to 24.00
*Low phos., English	24.26 to 24.76
Charcoal, Birmingham	31.00 to 32.00
Charcoal, Superior, Chicago	29.04

Silvery iron Jackson county, Ohio furnace, 5 per cent $27.50; 6 per cent $28.50; 7 per cent $29.50; 8 per cent $30.50; 9 per cent $32.00; 10 per cent $34.00; 11 per cent $36.00; 12 per cent $38.00; 13 per cent $40.00; and 14 per cent $42.00.

Bessemer ferrosilicon, Jackson county, Ohio, furnace, 10 per cent $36.00; 11 per cent $38.00; 12 per cent $40.00; 13 per cent $42.00; 14 per cent $44.00; 15 per cent $46.00; 16 per cent $49.00; 17 per cent $51.50.

*Duty paid, delivered Philadelphia consumers.

of the pig iron market is unsatisfactory to sellers. Little buying is noted, but producers expect several sanitary ware manufacturers in the market shortly. Northern iron is quoted at $21, Ironton, and southern, $22 to $23, Birmingham. Since northern iron can be brought into the Cincinnati territory from the Ironton district 38 cents a ton lower than a month ago, the movement of southern iron is affected. The freight rate was reduced from $2.27 to $1.89 a ton. But the $2.75 rate will be restored May 1. A melter in this district bought 1000 tons of low phosphorus iron for second quarter. The Lunkenheimer Co., wants 200 tons of southern iron and 200 tons of malleable.

St. Louis, March 1.—Pig iron demand is quiet. There were a few scattered inquiries and sales for prompt delivery during the week, but the entire tonnage was under 700 tons. The melt is holding up well, and most users are anxious to get their contract quotas as due. Some plants may reduce operations in March unless new business is placed. Prices are quotably unchanged, but there is a well-defined downward trend in the market. There were reports of $20 being done on Chicago iron, but these could not be confirmed, the lowest figure substantiated being $21, furnace. Southern producers are quoting $23, Birmingham, but this figure is out of line, and no business has been closed.

Birmingham, Ala., March 1.—Sales of pig iron booked during February cover a considerable portion of the output for second quarter. Spot iron of average analysis is not easily obtained. Quotations are $22 base, with $23 for small lots. Some users are negotiating for second quarter. Two furnaces under repair probably will be ready for operation this month.

New York, March 2.—No action has been taken on the pig iron inquiries mentioned a week ago. Consumers investigated the market but hesitate to buy owing to a fear prices may drop. The market is somewhat easier than a week ago. Eastern Pennsylvania foundry iron for second quarter now is $22 to $22.50, base furnace. Buffalo foundry is not over $21 for second quarter. The situation is complicated by numerous offerings of foreign foundry iron at $20 to $23, duty paid, f.o.b. cars, tidewater. The melt is heavy and stocks on consumers' yards are comparatively small.

Ferroalloys

Good Shipments But Few Sales in Ferroalloys—Prices Firm

New York, March 2.—Lively shipments on contracts continue the feature of the ferromanganese situation as new buying is small. The same condition applies to spiegeleisen. Prices in both metals are steady. The Imperial Steel Works of Japan are in the market for 500 tons of ferromanganese for March shipment. It is not expected that this business will be placed in the United States as the business of this consumer usually has been going to Europe.

Special ferroalloys are moving in large quantities on contracts, and in the case of vanadium on current sales. All prices are steady. Ores also are generally unchanged, with tungsten slow on new business at present, about $12.15 to $12.35 a short ton unit on wolframite.

Pittsburgh, March 2.—Spot sales of ferroalloys are even fewer this week than last. In ferromanganese they involve only a carload or two of imported material at the full market figure, $115 Baltimore base, and one or two other carloads where the brokers' commission was split in order to offer the customer a slight concession. Nothing new has occurred in connection with other ferroalloys although shipments against contracts in ferrosilicon, ferrovanadium, ferrotungsten, ferrophosphorus, as well as spiegeleisen, continue fair with prices unchanged.

Ferroalloy Prices

†Ferromanganese 78 to 82 per cent, tidewater, or furnace first hand and resale	$115.00
Ferromanganese delivered Pittsburgh	119.79
Spiegeleisen 19 to 21 per cent domestic furnace or tidewater	34.00
Ferrosilicon, 50 per cent contract freight allowed	85.00
Ferrotungsten standard, per pound contained	1.14 to 1.18
Ferrochrome, 69 to 70 chromium, 6 to 8 carbon, cents per pound contained, delivered	11.00 to 11.50
Ferrovanadium, 30 to 40 per cent per pound estimated, according to analysis	3.25 to 4.00
Ferro-carbon-titanium, car lots, producer's plant, net ton	200.00
Ferrophosphorus, electrolytic, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18 per cent material)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23 to 25 per cent, f.o.b. Anniston, Ala., (24 per cent material)	122.50

†Duty paid

Coke

Furnaces and Foundries Negotiating for Second Quarter—Prices Continue to Settle

COKE prices are easier in practically all markets, although some by-product producers have continued February schedules into March. Connellsville furnace fuel is down to $3.25 to $3.50, while distress lots have been moved at $3 to $3.10. One valley stack placed March tonnage below $3.50. Furnace and foundry interests have begun negotiations for second quarter.

Pittsburgh, March 2.—Distress offerings of beehive furnace coke still appear. Brokers are able to pick up odd lots at $3 and $3.10 and are disinclined to pay $3.25 and $3.50 asked by producers for coke to be made. Ovens are not going out fast enough to stabilize the market. Coke still is reaching eastern destinations, necessitating the diverting of orders and price adjustments. Some interests think most of March will be devoted to clearing the decks for real second quarter activity by blast furnaces. One valley stack now obtaining 12,000 tons monthly on contracts, but requiring approximately 6000 tons additional, is understood to have closed for a portion of the extra amount for March below $3.50. Steelworks furnaces recently in the market decided against buying at present. One or two eastern stacks are negotiating. After a sale ten days ago of several thousand tons for March delivery at $3.50 one interest sold another 1000 tons at $3.25. One new sale of crushed coke, a carload daily for a month, is reported at around $4. Additional negotiations for second quarter foundry coke are starting. Several propositions now are up for closing. Quotations range from $4.50 to $5.50, with $4.25 available in the spot market. The majority of sales have been closed below $5.

Production of coke in the Connellsville region for the week ended Feb. 20 was 232,160 tons, against 245,060 tons the preceding week, according to report of the *Connellsville Courier*.

Chicago, March 2.—By-product foundry coke is going unchanged into March at $10.50, Chicago ovens, or $11, delivered Chicago. Production has undergone practically no change since the end of the coal strike.

St. Louis, March 1.—The continued heavy melt at foundries and furnaces is reflected in a brisk demand for coke. By-product ovens are moving approximately their entire current production of foundry coke. Shipments of industrial coke are heavy. Prices are unchanged.

Birmingham, Ala., March 1.—Coke production is steady, though the market is easier. Quotations range from $5.50 to $6 for the foundry grade.

Coke Prices

Beehive, Ovens

Prices per net ton

Connellsville furnace	$ 3.00 to 3.50
Connellsville foundry	4.25 to 4.50
New River foundry	7.00 to 8.00
New River furnace	5.00 to 6.00
Wise county furnace	4.00 to 4.50
Wise county foundry	5.50 to 6.00
Alabama foundry	5.50 to 6.00
Alabama furnace	5.00 to 5.25

By-Product

Foundry, Newark, N. J.; del.	$11.01 to 11.52
Foundry, Chicago, ovens	10.50
Foundry, New England, del.	13.00
Foundry, St. Louis	10.00
Foundry, Granite City, Ill.	10.00
Foundry, Birmingham	5.50 to 6.00
Foundry, Indianapolis, del.	11.25

Plates

Mills Seeking to Establish 1.90c as Second Quarter Price—Moderate Activity in Market

A PRICE of 1.90c, Pittsburgh, on plates for second quarter has been announced by the leading interest and large independent manufacturers, but business has not been sufficiently large to afford a test. On current sales for delivery this month 1.80c to 1.90c apply, the more general figure being 1.85c. Orders from car shops and tank builders have been fair.

PLATE PRICES, PAGE 590

Chicago, March 2.—Considerable tank work is emanating from the new Pan Handle oil field in Texas. One maker of plates has booked business aggregating 7500 tons and close to 2000 tons additional for this field are pending. The placement of 2800 gondolas for the Illinois Central and Chicago & Eastern Illinois railroads the past week will bring 25,000 tons of plates to Chicago mills. One maker of universal mill plates is considerably behind in deliveries. Eastern makers continue to solicit business actively in and near Chicago. Increased specifications permit the making of better schedules. Plates are quoted at 2.10c, Chicago.

Boston, March 2.—Demand for plates has dropped to a low point and inquiry offers little encouragement. Prices, however, are firm at 1.80c, Pittsburgh, or 2.165c, delivered. Railroads are planning considerable bridge work in the spring.

Philadelphia, March 2.—Plate bookings are good, most eastern mills operating at 75 per cent, and unable to promise immediate delivery. The Steel corporation has named 1.90c, Pittsburgh, for second quarter, and some eastern makers are likely to adopt the same figure. Plates for prompt delivery continue quotable at 1.80c, Pittsburgh.

Pittsburgh, March 2.—While 1.85c and even 1.80c prices on plates still are available, platemakers are taking a firmer stand and will not quote less than 1.90c in Pittsburgh and vicinity, and it now looks as though 1.90c may be the minimum in any direction for second quarter. Orders from car shops from boiler shops, and one or two oil tank inquiries cover the remainder of the list.

Cleveland, March 2.—Another inquiry for a lake freighter of smaller size involving 4000 tons has appeared. With the two larger propositions reported last week, four vessels now are under negotiation. The asking price on plates now is 1.90c, Pittsburgh or 2.09c, Cleveland, conforming to the move of larger producers reported last week. The new price, however, has not been tested for while the market is firmer, only small lots have been done at 1.90c. Current orders display no marked change in the attitude of buyers to increase the volume of placements.

St. Louis, March 2.—Fair sales of tank plates to the oil industry are reported. One order is for 1500 tons, and another for 1300 tons.

CONTRACTS PLACED

3500 tons, penstock for Feather River Power Co., San Francisco, to Western Pipe & Steel Co. and Ferrum Co. of Germany.

3300 tons, 46 to 58-inch lock-bar pipe for installation near Fairbanks, Alaska, to Western Pipe & Steel Co. through the United States Stores Co. of Salt Lake City.

700 tons, four 55,000-barrel tanks for the Humble Pipe Line Co., Houston, Tex., to the United Iron Works Inc., Kansas City, Mo.

300 tons, miscellaneous elevated tanks in different sections, to the Riter-Conley Co.

CONTRACTS PENDING

200 tons, water pipe, Seattle; pending.

12,800 tons, pipe line San Diego, Calif.; bids March 22.

2020 tons, 22 tanks for Union Oil Co., Los Angeles; bids opened.

1500 tons, 30-inch welded penstock for Los Angeles; bids in.

300 tons, pipe line, Tacoma, Wash.; bids in.

212 tons, 12-inch welded pipe, Los Angeles, special 789-C; bids in.

100 tons, pipe line, Mt. Shasta, Calif.; bids in March 12.

Congratulate Corporation

The office of Elbert H. Gary, chairman of the United States Steel Corp., 71 Broadway, New York, resembled a conservatory Feb. 25. It was flooded with flowers sent from all over the country in celebration of the Steel corporation's twenty-fifth birthday. The day also marked the twenty-fifth anniversary of Judge Gary's becoming chairman of the corporation. Messages of congratulation were conveyed to Judge Gary's home. Judge Gary said that he regarded April 1 as the red letter event of his career and that of the Steel corporation, because it was on that date that the books were formally opened for business.

Semifinished

Buyers and Sellers Waiting—Few Inquiries Fail to Affect Prices

SOME inquiries for sheet bars for second quarter have been issued during the past week, but makers generally have not opened books for that period, and present prices of $36 on sheet bars and $35 on billets and slabs are not stimulating sales. Interest of makers appears to be centered in specifications, which are satisfactory. Users of forging billets have overspecified.

SEMIFINISHED STEEL PRICES, PAGE 590

Pittsburgh, March 2.—Activity in the market for semifinished steel centers on specifications. Practically all customers are up to date with their orders. Several sheet bar negotiations for second quarter came up this week, including the Apollo Steel Co., together with some slab and billet business. Prices of slabs and billets are unchanged at $35 while on sheet bars $36 will be asked. Some forging billet specifications came in this week and forging billet customers are over-specifying. One buyer increased his tonnage by 40 per cent at $41. Wire rod contracts at $45 are being shipped out gradually, cold finishers and rivetmakers as well as the chain manufacturers taking a large aggregate tonnage each month. Some wheel skelp business is developing and some tubular skelp contracts for second quarter are about to come up. From 1.85c to 1.90c is quoted.

Youngstown, O., March 2.—No new buying demand for semifinished steel has developed. Sheet bar producers are receiving a fair volume of specifications but in no case is the tonnage in excess of that covered by actual sheet orders. Sheet bars are quoted at $36, Youngstown. Prices for second quarter sheet bars have not been named, but some producers are giving thought to the matter. Billet and slab prices have undergone no change, $35 Youngstown being named on standard sizes and $36 Youngstown on sizes smaller than 4 x 4 inches or equivalents.

Cleveland, March 2.—Makers of semifinished steel here and in the valley continue to quote $36 on sheet bars, and $35 on billets and slabs, although these prices have not been tested recently by offers of substantial tonnages. Inquiry is a little better than a week ago. The leading maker here has not opened books for first quarter. It is quoting the foregoing prices, Cleveland or Youngstown basis, on current business.

Chicago, March 2.—Billet sales by one maker the past week totaled 5000 tons. The market is unchanged at $35, base, Chicago.

Iron and Steel Scrap Prices

Corrected to Tuesday Noon. Gross Tons Delivered to Consumer

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	13.00 to 14.00
Boston (dealers)	11.00 to 11.50
Buffalo	15.00 to 15.50
Buffalo, No. 1	16.00 to 16.50
Chicago	14.00 to 14.25
Cincinnati (dealers)	12.50 to 13.00
Cleveland	15.00 to 15.50
Detroit	14.75 to 15.25
Eastern Pennsylvania	15.50 to 16.00
Bethlehem delivery	15.50
New York (dealers)	11.50 to 12.00
Pittsburgh	17.00 to 18.00
St. Louis	13.50 to 14.00
Valleys, No. 1	17.00 to 17.25
Valleys, No. 2	16.00 to 16.25

COMPRESSED SHEETS

Buffalo	14.25 to 14.75
Chicago	12.00 to 12.50
Cleveland	14.00 to 14.25
Detroit	12.50 to 13.00
Pittsburgh	16.00 to 16.50
Valleys	16.00 to 16.25

BUNDLED SHEETS

Buffalo	13.50 to 14.00
Cincinnati (dealers)	9.00 to 9.50
Cleveland	12.25 to 12.50
Eastern Pennsylvania	13.50
Pittsburgh	15.00 to 15.50
St. Louis	8.00 to 8.50

SHEET CLIPPINGS, LOOSE

Chicago	9.00 to 9.50
Cincinnati	8.00 to 8.50
Detroit	9.75 to 10.25

STEEL RAILS, SHORT

Birmingham	14.00 to 14.50
Buffalo	17.00 to 17.50
Chicago	17.75 to 18.25
Cincinnati (dealers)	17.50 to 18.00
Cleveland (over 6 ft.)	16.50 to 17.00
Detroit	17.00 to 17.50
St. Louis	17.00 to 17.50

STOVE PLATE

Birmingham	14.00 to 14.50
Boston (consumers)	14.00 to 14.50
Buffalo	15.00
Chicago	16.25 to 16.75
Cincinnati (dealers) (net)	9.00 to 9.50
Cleveland	13.00 to 13.50
Detroit (net tons)	13.25 to 13.75
Eastern Pennsylvania	14.50
New York (dealers)	10.25 to 10.75
Pittsburgh	13.50 to 14.00
St. Louis	14.50 to 15.00

LOW PHOSPHORUS

Buffalo	18.50 to 19.00
Cincinnati (dealers)	17.00 to 17.50
Eastern Pennsylvania	20.00 to 21.00
Pitts. billet and bloom crops	22.00 to 22.50

SHOVELING STEEL

Chicago	14.00 to 14.25
Pittsburgh	13.50 to 14.00
St. Louis	13.50 to 14.00

KNUCKLES, COUPLERS, SPRINGS

Chicago	17.25 to 17.75
Eastern Pennsylvania	19.00 to 21.00
Pittsburgh	19.50 to 20.00
St. Louis	14.50 to 15.00

FROGS, SWITCHES, GUARDS

Chicago (cut)	15.25 to 15.75
Eastern Pennsylvania	16.00 to 16.50
St. Louis	15.00 to 15.50

ANGLE BARS—STEEL

Buffalo	16.50 to 17.00
Chicago	16.50 to 17.00
St. Louis	15.00 to 15.50

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	12.00 to 13.00
Boston (dealers)	13.00 to 13.50
Buffalo, No. 1	14.00 to 14.50
Buffalo, No. 2	15.50 to 16.00
Chicago, No. 1	14.50 to 15.00
Chicago, No. 2	13.75 to 14.25
Cincinnati, No. 1 (dealers)	9.50 to 10.00
Cleveland, No. 1	13.50 to 14.00
Eastern Pennsylvania	18.00
New York, No. 1 (dealers)	14.50 to 15.00
Pittsburgh, No. 1	14.00 to 14.50
Pittsburgh, No. 2	17.50 to 18.00
St. Louis, No. 1	13.00 to 13.50
St. Louis, No. 2	13.50 to 14.00

WROUGHT PIPE

Boston (dealers)	11.00 to 11.50
Buffalo	15.00 to 15.50
Eastern Pennsylvania	16.00 to 16.50
New York (dealers)	11.75 to 12.50

YARD WROUGHT

Boston	12.00 to 12.50
Eastern Pennsylvania	17.00

BUSHELING

Buffalo	14.25 to 14.75
Chicago, No. 1	12.25 to 12.75
Chicago, No. 2	9.00 to 9.50
Cincinnati, No. 1 (dealers)	9.50 to 10.00
Cleveland, No. 1	13.25 to 13.50
Cleveland, No. 2	12.50 to 12.75
Eastern Pennsylvania	14.00 to 15.00
Pittsburgh, No. 1	15.00
St. Louis, No. 1	11.75 to 12.25

MACHINE SHOP TURNINGS

Birmingham	8.00 to 8.50
Boston (chemical)	9.00 to 9.50
Buffalo	11.00 to 11.50
Chicago	9.50 to 10.00
Cincinnati (dealers)	8.00 to 8.50
Cleveland	12.00 to 12.50
Detroit	10.25 to 10.75
Eastern Pennsylvania	14.00
New York (dealers)	9.00 to 10.25
Pittsburgh	13.00 to 14.00
St. Louis	7.50 to 8.00

CAST IRON BORINGS

Birmingham (chemical)	15.50 to 16.50
Birmingham (plain)	8.00 to 9.00
Boston (chemical)	11.00 to 11.25
Boston (dealers)	8.50 to 9.00
Buffalo	12.00 to 12.50
Chicago	12.00 to 12.50
Cincinnati (dealers)	8.50 to 9.00
Cleveland	12.50 to 13.00
Detroit	10.75 to 11.25
Eastern Pennsylvania	14.00
Eastern Pennsylvania (chem.)	15.50 to 16.00
New York (dealers)	9.25 to 10.25
Pittsburgh	13.50 to 14.00
St. Louis	10.75 to 11.25
Valleys	12.50 to 13.00

MIXED BORINGS AND TURNINGS
For blast furnace use

Boston (dealers)	8.50 to 9.00
Buffalo	12.00 to 12.50
Cincinnati (dealers)	8.00 to 8.50
Cleveland	12.50 to 13.00
Detroit	10.75 to 11.25
Eastern Pennsylvania	12.50 to 13.50
New York (dealers)	9.75 to 10.25
Pittsburgh	13.50 to 14.00

PIPES AND FLUES

Chicago	12.00 to 12.50
Cincinnati (dealers)	8.50 to 9.00
Cleveland	11.00 to 11.50
St. Louis	10.50 to 11.00

RAILROAD GRATE BARS

Buffalo	13.50 to 14.00
Chicago	15.00 to 15.50
Cleveland	13.50 to 13.75
Eastern Pennsylvania	14.50
New York (dealers)	11.50 to 12.00
St. Louis	13.00 to 13.50

FORGE FLASHINGS

Boston (dealers)	9.50 to 10.00
Buffalo	13.00 to 13.50
Chicago	10.00 to 10.50
Cleveland (under 10 in.)	12.75 to 13.25
Cleveland (over 10 in.)	12.75 to 13.25
Detroit	10.50 to 11.00
Pittsburgh	14.00 to 14.50

FORGE SCRAP

Boston (dealers)	9.00 to 9.50
Chicago	18.00 to 18.50
Eastern Pennsylvania	14.50 to 15.00

ARCH BARS AND TRANSOMS

Chicago	23.00 to 23.50
St. Louis	19.50 to 20.00

Iron Steel Works Scrap

AXLE TURNINGS

Boston (dealers)	9.50 to 10.00
Buffalo	14.50 to 15.00
Chicago	14.50 to 15.00
Cleveland	13.75 to 14.25
Eastern Pennsylvania	15.00
Pittsburgh	16.50 to 17.00
St. Louis	11.00 to 11.50

STEEL CAR AXLES

Birmingham	19.00 to 19.50
Boston (shipping point)	18.00 to 18.50
Buffalo	16.50 to 17.00
Chicago	19.50 to 20.00
Cleveland	17.50 to 18.00
Eastern Pennsylvania	24.00 to 25.00
Pittsburgh	22.50 to 23.00
St. Louis	20.00 to 20.50

SHAFTING

Boston (shipping point)	18.00 to 18.50
Chicago	19.75 to 20.25
Eastern Pennsylvania	22.00 to 23.00
New York (dealers)	17.50 to 18.00
St. Louis	17.25 to 17.75

Iron Foundry Scrap

CAR WHEELS

Birmingham, iron	16.00 to 16.50
Boston (consumers)	17.50 to 18.00
Buffalo, iron	15.50 to 16.00
Bualo, steel	16.50 to 17.00
Chicago, iron	16.50 to 17.00
Chicago, steel	18.00 to 18.50
Cincinnati	12.50 to 13.00
Eastern Pennsylvania	18.00 to 18.50
New York iron (dealers)	14.50 to 15.00
Pittsburgh, iron	18.00 to 18.50
Pittsburgh, steel	19.50 to 20.00
St. Louis, iron	16.50 to 17.00
St. Louis steel	17.00 to 17.50

NO. 1 CAST SCRAP

Birmingham, cupola	17.00 to 18.00
Boston	19.00 to 19.50
Buffalo	15.50 to 16.00
Chicago, No. 1 machinery	18.75 to 19.25
Chicago No. 1 railroad or agricultural	18.00 to 18.50
Cincinnati No. 1 Machinery cupola (net tons dealers)	18.50 to 19.00
Cleveland, cupola	17.25 to 17.75
Detroit (net tons)	15.00 to 15.50
Eastern Pennsylvania, cupola	18.00 to 18.50
New York, cupola (dealers)	15.00 to 15.50
Pittsburgh, cupola	17.00 to 17.50
San Francisco, delivered	20.00 to 21.00
Seattle	17.00
St. Louis, railroad	16.50 to 17.00
St. Louis, agricultural	16.25 to 16.75
St. Louis, machinery	18.50 to 19.00
Valleys	17.50

HEAVY CAST

Boston	17.50 to 18.00
Buffalo (breakable)	14.50 to 15.00
Cleveland	13.00 to 13.25
Detroit (Automobile) (net tons)	20.00 to 20.50
Eastern Pennsylvania	16.50
New York (dealers)	14.00 to 14.50
Pittsburgh	14.00 to 14.50

MALLEABLE

Boston, railroad	19.50 to 20.00
Buffalo	18.00 to 18.50
Chicago, agricultural	16.50 to 17.00
Chicago, railroad	17.50 to 18.00
Cincinnati, railroad (dealers)	14.50 to 15.00
Cincinnati, agricultural (dealers)	18.00 to 18.50
Cleveland, agricultural	18.00 to 18.50
Cleveland, railroad	19.00 to 19.50
Detroit	15.50 to 16.00
Eastern Pennsylvania, railroad	17.00
Pittsburgh, railroad	18.50 to 19.00
St. Louis, agricultural	13.50 to 14.00
St. Louis, railroad	15.50 to 16.00

Miscellaneous Scrap

RAILS FOR ROLLING
5 feet and over

Birmingham	15.00 to 16.00
Boston (dealers)	12.50 to 13.00
Buffalo	17.00 to 17.50
Chicago	16.50 to 17.00
Cleveland	17.00 to 17.25
Eastern Pennsylvania	17.50 to 18.00
New York	14.00 to 14.50
Pittsburgh district	19.00 to 19.50
St. Louis	16.25 to 16.75

LOCOMOTIVE TIRES

Chicago, No. 1	18.00 to 18.50
Chicago, cut	18.00 to 18.50
St. Louis, No. 1	16.50 to 17.00

LOW PHOSPHORUS PUNCHINGS

Chicago	17.00 to 17.50
Eastern Pennsylvania	19.00 to 20.00
Pittsburgh	20.00 to 20.50

Scrap

Slight Shifts in Prices Indicate Changes and That Demand May Turn Upward Soon

MOVEMENTS in scrap indicate the bottom has been reached and expectation is held that a change upward may be expected. Slight changes are being made in prices and some added buying is seen here and there, though not of importance. Higher bids for railroad scrap and better offers by some consumers indicate impending improvement. Prices are unchanged.

Chicago, March 2.—An atmosphere of speculative bullishness still pervades a portion of the iron and steel scrap trade but the larger sellers do not yet discern a solid footing for a better market. Some dealers believe the market, now quoted on the basis of $14 to $14.25 for heavy melting steel, is 25 cents to 50 cents, but supporting facts are lacking. Bidding for railroad material has been more spirited, the Burlington receiving $14.90, delivered, for melting steel, $15.25 for No. 1 wrought, $15.50 for grate bars and $18.50 for malleable. Consumers, however, are not paying these prices.

Boston, March 2.—The otherwise dull scrap iron and steel market has been given some life by the sale of 2000 tons of miscellaneous material by the Boston & Maine railroad, a sale of 650 tons of steel scrap by the Boston Elevated railway, and several smaller sales on the part of large manufacturers in the district.

New York, March, 2.—Although scrap prices are unchanged, the market is dull and tending toward weakness. Mills are showing little interest and the outlook over the next few weeks is not regarded as promising. Cast scrap is among the few items showing firmness.

Philadelphia, March 2.—Large dealers continue to buy scrap for the account of large eastern mills and the latter are taking scattered lots. Buying in the open market is small. Prices are easier.

Buffalo, March 1.—Scrap dealers have been unable to check the decline. Heavy melting steel is quoted nominally this week at $15 to $15.50 and large consumers who formerly would have snapped up offerings at this price are showing little interest.

Pittsburgh, March 2.—A nearby purchaser has closed for a small lot of heavy melting steel at $18. Other users are unwilling to pay more than $17 to $17.50. For some time various mills have been conserving their reserve stocks and buying distress lots as available when dealers have been forced to sell.

Youngstown, O., March 2.—While shipments of scrap against contracts are reported, heavy spot buying is almost absent. Prices sagged about 25 cents a ton on practically all lines. Large consumers contracted for large quantities last fall.

Cleveland, March 3.—Dullness continues in iron and steel scrap. Consumers are neither buying nor inquiring and dealer activity is largely confined to covering contracts. Large railroad scrap lists are of considerable concern to dealers.

Detroit, March 2.—Movement of iron and steel scrap continues sluggish and uneventful. Large quantities of all grades are available due to the continued heavy production of the automobile and allied manufacturers.

Cincinnati, March 1.—Except the cast grades, which are in fair demand, all scrap items are weak and can be bought at low prices. Most dealers have marked prices down another 50 cents a ton. The weakness has been aggravated by the large lists disposed by railroads in recent weeks.

Birmingham, Ala., March 1.—Little new business in iron and steel scrap is reported but contracts call for much tonnage. Heavy melting steel is down to $13.

St. Louis, March 1.—Iron and steel scrap continues dull and decidedly weak. The only feature was the purchase of a tonnage of steel by the Laclede Steel Co., at $14.75. This sale, while not impressive as to price, has served to halt the downturn on the material specified. The following railroad lists were before the trade: Union Pacific, 3500 tons; Missouri Pacific, 400 tons; Frisco, 500 tons; Pennsylvania 37,500 tons.

Gary Denies He'll Resign

New York, March 2.—A denial of a report that he is about to resign as chairman of the United States Steel Corp. has been issued by E. H. Gary. According to one rumor the chairman was to be succeeded about April 1, by Nathan L. Miller, former governor of New York. "So far as I know," said Mr. Gary, "the subject has not been discussed or considered."

Sheets

Market Is Quiet, and Prices of Common Grades Easier—More Motorcar Tonnage Expected

NEW orders and specifications for common sheets have been slower since high-grade material was reduced to 4.40c. Blue annealed shows no change from 2.25c to 2.30c, but black is easier at 3.15c to 3.25c. Galvanized is held at 4.60c. Despite the lack of automobile tonnage in February, the sheet tonnage booked by the leading interest amounted to 87 per cent of capacity.

SHEET PRICES, PAGE 590

Youngstown, O., March 2.—Hand-to-mouth buying continues to characterize the sheet market. Since the recent break in high grade sheets specifications for common sheets have receded. Buying is beginning for second quarter but inquiry indicates orders are being withheld until prices are clarified. Large makers are quoting black at 3.35c, blue annealed at 2.30c and galvanized at 4.60c. Many small mills are in need of tonnage and have been forced to go under prevailing quotations to obtain business. Second quarter tonnages of black sheets have been placed with such mills at 3.15c to 3.25c. Blue annealed shows a firmer tendency, prices ranging from 2.25c to 2.30c. Galvanized is quotable at 4.60c. Tonnage has been accumulating on warehouse floors to such an extent that some makers have been compelled to move at minimum quotations. High-grade sheets continue quoted at 4.40c for No. 22 gage. Second quarter buying is growing and some orders involve attractive tonnages. Sheet mill operation is 87 per cent compared with 82 per cent a week ago.

Boston, March 2.—Active inquiry for galvanized sheets developed during the week. Galvanized sheets are firm at 4.60c, Pittsburgh. Black sheet prices are irregular.

Philadelphia, March 2.—Sheet prices are firmer. Shading noted some weeks ago seems to have disappeared. Several contracts for second quarter have been closed at 2.50c, Pittsburgh, for blue annealed and 4.60c for galvanized. A few inquiries for black sheets for second quarter have developed quotations of 3.35c. The majority of buyers are not interested in forward business. Current specifications are good.

Pittsburgh, March 2.—Sheet manufacturers had fairly good business in February, despite the lack of automobile tonnage. The American Sheet & Tin Plate Co. reports that its bookings represented practically 87 per cent of capacity, and if automotive tonnage had been one-half of normal, this interest would have had more business than capacity to produce. Bookings from automotive customers were about 15 per cent of what they should have been. This buying, how-

ever, has started, and large orders are scheduled within a week or two, at 4.40c. Some parts makers are seeking all the stock list sheets they can utilize. The high percentage of order receipts in February indicates that other consuming lines have been active, including agricultural implement makers, car builders, metal lathe makers, metal furniture, shelving, locker and kindred line manufacturers, and others. The American company operated about 77 per cent last week but will increase the schedule this week. Independents are averaging about 80 or 85 per cent. The response to the opening of the books on Feb. 27 for the second quarter so far has been slow. Some independents have not booked tonnage. Prices on black sheets are irregular; blue annealed and galvanized less so.

Buffalo, March 2.—Sheet buying is improving. Specifications for spring delivery are coming out, and some makers are booked well into April on most sizes. Some automobile makers have reduced purchases but still offer a good market for spring tonnage.

Chicago, March 2.—Demand for blue annealed sheets continues to be the mainstay of the western market. Specifications for galvanized and black are picking up but mill schedules still are unbalanced. Low inventories of consumers and the probability that wage matters will assume increasing importance are strong features of the sheet situation. Western mills operations are averaging about 90 per cent. In Chicago proper galvanized sheets are selling at 4.75c, black at 3.50c and blue annealed at 2.65c. The market is less firm as valley competition is encountered outside of Chicago.

St. Louis, March 1.—Price uncertainty has resulted in a slight slowing down in new orders and specifications for sheets. While quotations have not been changed, there are reports of business at slightly under current levels. There has been some buying by jobbers.

Tin Plate

Material From Stock Stronger—Inquiry For 12,000 Boxes Pending

TIN PLATE PRICES, PAGE 590

Pittsburgh, March 2.—Specifications and shipments of tin plate continue heavy. Only small filling-in lots can be accepted for shipment this quarter. Some users need additional tonnage and they keep stock lists well cleaned up. Some makers have the lowest tin plate stock lists of their history. One order for 12,000 or 15,000 boxes of oil can plates from stock has not been placed. Stock plate prices around $4.75 are 50 cents higher on the average now than four or five months ago. The open market figure is unchanged at $5.50. Operations average between 90 and 95 per cent, with the American Sheet & Tin Plate Co. slightly above the 90 per cent level.

Strip Steel

February Bookings Lower But March Promises Well

STRIP PRICES, PAGE 590

Pittsburgh, March 2.—For representative strip steel makers February fell off in bookings and shipments, the biggest drop being in cold rolled strip. One large maker reports a deficit of 1000 tons but from the way March starts out believe this handicap soon will be overcome. Some contracting for second quarter has commenced. No exception to the quoted figure is encountered, 3.90c on cold and 2.30c on hot being firm. Operations have increased slightly to an 85 per cent average.

Pipe

Larger Jobber and Line Pipe Orders Increase Operations—Cast Buying Heavier

HEAVIER tonnage received from oil country jobbers and line pipe orders have increased mill operations to about 80 or 85 per cent. Cast iron pipe is gaining seasonal momentum. Three eastern contracts involving 2500 tons each were placed, one going to a French maker. Cast prices on 6-inch and over pipe dropped $1 a ton at Birmingham.

PIPE PRICES, PAGE 590 AND 628

Pittsburgh, March 2.—Incoming business in pipe mainly from oil well drilling territories is responsible for an upturn in pipe mill operations. The average now is between 80 and 85 per cent whereas last December it ran between 60 and 65 per cent. Larger individual orders from oil country jobbers, several more line pipe contracts to large producers and an increasing demand for standard full weight merchant pipe, are noted. The latter are scheduled to increase with a continuance of better weather and with expanding building programs. A large tonnage of line pipe probably will be purchased this coming season by the Mexican-Panuca Oil Co., which recently acquired 750,000 acres of oil lands in Venezuela. The Louisiana Oil & Refining Co., Shreveport, La., was a recent buyer of pipe for drilling operations in the Urania field. Drilling in Pennsylvania shortly will get under way, and some orders against this activity already are being received. Another advance in the price of Corning crude oil Feb. 27 encourages the market.

New York, March 2.—Cast pipe inquiries and orders show improvement. Several municipal jobs have been closed including those for Washington, D. C., Rochester, N. Y., and Buffalo, each involving 2500 tons. The local department of water supply, noted last week as closing bids on 2000 tons March 5, now is inquiring for approximately 8000 tons additional. Prices are firm except where foreign competition enters.

The Imperial Government railways of Japan have placed orders for about 550,000 feet of gas pipe. Half the business went to the Youngstown Sheet & Tube Co., and the remainder to a European maker.

Chicago, March 2.—Most makers of cast iron pipe are booked farther ahead than at this time in 1925, largely because western cities have come into the market earlier than usual. A large tonnage of spring pipe remains to be placed. Considerable business has been taken under cover. One maker is booked into June on certain sizes. While small lots of cast iron pipe 6-inch and over command $42, Birmingham, or $50.20, Chicago, moderate to large size work is going at $41, Birmingham, or $49.20, Chicago. The range on 4-inch pipe is $53.? to $54.20, Chicago.

Birmingham, Ala., March 1.—Many lettings are reported in cast iron pressure pipe. Little improvement is noted in soil pipe and fittings. Early spring business now promises greater tonnage than has been anticipated. Shipments of cast iron pressure pipe are heavy. The price on cast iron pressure pipe for the remainder of the first and for second quarter business has dropped $1 a ton to $40 base on 6-inch and over.

Boston, March 2.—Demand for cast iron pipe is improving throughout New England. Specifications for spring work are being completed. French and German producers were lower than American on 600 tons of 6 to 16-inch pipe for Medford, Mass., opened recently. All bids were thrown out and new bids are called for.

CONTRACTS PLACED

5600 tons, 30, 36 and 48-inch cast pipe for Chicago, reported awarded United States Cast Iron Pipe & Foundry Co. on a bid of $48.15 delivered.

2500 tons, water pipe, Buffalo, to the United States Cast Iron Pipe & Foundry Co.

2500 tons, 6 to 30-inch pipe, Rochester, N. Y., to B. Nicoll & Co., representing French makers.

2500 tons, water pipe, Washington, D. C., to United States Cast Iron Pipe & Foundry Co.

1000 tons, 6 to 16-inch, Pawtucket, R. I., to Warren Foundry & Pipe Co.

733 tons, 6 to 16-inch De Lavaud pipe, for Bellingham, Wash.; to United States Cast Iron Pipe & Foundry Co.

600 tons, Flint, Mich., to James B. Clow & Sons Co.

500 to 600 tons, 6 to 8-inch water pipe,

Yonkers, N. Y., to the Donaldson Iron Works.
400 to 500 tons, water pipe, Medford, Mass., to the United States Cast Iron Pipe & Foundry Co.; foreign makers were low bidders.
200 tons, 4 to 16-inch water pipe, Mt. Vernon, N. Y., to the Donaldson Iron Works.
106 tons, 8 and 10-inch class B pipe for Arcadia, Calif., to B. Nicoll & Co. who will furnish French pipe.

CONTRACTS PENDING

8000 tons, department of water supply, gas and electricity, New York, noted last week as contemplated, now out for bids; as previously noted, the department will open bids on about 2000 tons, March 5.
5850 tons, 4 to 24-inch class B pipe for Portland, Oreg.; bids in March 5.
3610 tons, 4 to 24-inch class B pipe for Laguna Beach, Calif.; bids in.
3088 tons, 4 to 12-inch class B and C pipe for Los Angeles, special 789-B; bids in March 5.
750 tons, South Park commission, Chicago; bids in March 3.
600 tons, 6 to 30-inch, Hartford, Conn.; bids in.
600 tons, 6 to 16-inch, Medford, Mass.; new bids called for.
550 tons, Mishawaka, Ind; bids in March 8.
430 tons, Evanston, Ill.; bids in.
250 tons, Mundelein, Ill.; bids in.
250 tons, Little Chute, Wis.; bids in.
200 tons, water pipe, Bellville, N. Y.; the United States Cast Iron Pipe & Foundry Co. low bidder.
200 tons, water pipe, Morristown, N. J.; pending.

Bolts, Nuts, Rivets

First Quarter Prices to Rule Second Period—Demand Good

NUT AND BOLT PRICES, PAGE 590

Chicago, March 2.—Makers of bolts and nuts are about to begin soliciting second quarter contracts at first quarter prices. Specifications in February exceeded January or December and western works, averaging 80 per cent, are operating at the highest rate since last fall. Specifications from farm implement manufacturers continue good. The automotive industry opens March with its specifications the highest of the year to date. Bolt and nut prices are based upon 50, 10 and 10 off for large machine bolts. Structural rivets are unchanged at 2.75c, Chicago, while small rivets range from 70 and 10 to 70 and 5 off.

Iron Ore

Cleveland, March 2.—Opinion in the iron ore market appears more firmly settled that the prospective advance in price will not be over 25 cents a ton. The season's quotations are not expected to develop until action is taken on the Ford Motor Co.'s inquiry, and not all Lake Superior producers have submitted prices. Several weeks may elapse before the inquiry for about 275,000 tons is closed. In the meantime sellers are consulting with buyers to obtain estimates of requirements on contracts. The Ford business may decide prices that are to govern the market, and it may not. The inquiry involves four grades, and might be divided in such a way that other open market business will be an important factor. No other inquiries of importance are pending.

Bars

Demand Is Steady and Market Shows Strength With Advance Being Talked

WHATEVER slackening may have appeared in demand for steel bars since the first of the year, seems to have disappeared and users are again in the market, though second quarter buying is not yet being done. The Steel corporation and leading independents are endeavoring to establish 2.10c, Pittsburgh, on small lots, holding to 2.00c on larger lots.

BAR PRICES, PAGE 590

Chicago, March 2.—Much of the hesitancy that has marked the finished steel markets the past three weeks appears to have been shaken out and an atmosphere of better buying and price stability is apparent. It appears that February sales of finished steel exceeded those for January in spite of the shorter month. With two important makers specifications the past week have been running ahead of shipments by a satisfying margin. The weak spot in the building industry seems to have disappeared and with the exception of two makers of small cars, the automobile industry is on a slightly higher level. Though order books have lengthened the past few days practically prompt delivery is possible on all finished lines.

Among consumers there is less bearish talk on prices and among producers less is heard of an advance over 2.10c, Chicago. Rather, the tendency is to stiffen and to hold at this level. The manufacturing run on spring farm implements is about at an end, but this is the only point of soft steel bar consumption from which a decline threatens.

Both rail steel bars and bar iron continue to be quoted at 2.00c, Chicago. Bar iron is a week-to-week proposition. Considerable rail steel tonnage is going into farm lines. Better demand for rail steel for concrete reinforcing is apparent.

Boston, March 2—Bar specifications dropped slightly at Boston during the week but second quarter orders are being entered in good volume. An automobile accessory manufacturer bought 1500 tons of bars at 2.00c Pittsburgh. Producers are endeavoring to get 2.05c and 2.10c Pittsburgh on small lots.

Philadelphia, March 2.—Specifications for steel bars have improved. The Steel corporation's announcement of 2.00c to 2.10c, Pittsburgh for second quarter has aroused much interest. Independents are following this lead, although 2.00c still is the prompt price. Not many consumers are interested in second quarter.

Pittsburgh, March 2.—Steel bar buying in February was abreast of or slightly behind that of January. Bar mills continue to operate full. Demand is diversified but recently automotive business has taken a considerable spurt upward. Leading producers are stiffening prices to quote 2.10c, Pittsburgh for small lots and 2.00c for tonnage of size.

Cleveland, March 2.—The effort on part of the larger producers of steel bars to establish a price of 2.10c, Pittsburgh or 2.29c, Cleveland on small lots is continuing. This would represent an advance of $2 a ton. On larger orders 2.00c, Pittsburgh is being named generally. These prices also are being made to apply to second quarter. Buying for that period is beginning slowly although one mill reports sales of 1000 tons and 750 tons respectively. Tonnage going to the mills from this territory continues good.

Hoops and Bands

Orders Satisfactory and March Promises to Exceed February

HOOP PRICES, PAGE 590

Pittsburgh, March 2.—The hoop and band section of the hot strip industry is highly satisfactory, orders for the narrow sizes being more numerous than for the wider hot strips. While February fell off a trifle in bookings and shipments, this shortage soon will be made up, judging from the way business has developed. Hoops and bands are firm at 2.50c and operations are nearly full. Some start has been made on second quarter contracts.

Cold Finished Steel

Demand Good, Though Lacking Strength of Last Fall

Pittsburgh, March 2.—Although demand for cold-finished bars does not have the push noted in November, makers are well satisfied with its development, an improvement being noted each week. Automotive demand has expanded considerably. Between 80 and 85 per cent is the general average in operations, and the price is firm at 2.50c. No start has been made against second quarter business but the price is expected to continue the same unless merchant bars are advanced.

Structural Shapes

Spring Building Movement Shows More Life—Awards and Inquiries Heavier—Prices at Chicago Reflect Keen Competition

SPRING building programs are gaining momentum and more tonnage has appeared in the award and pending state than in some time. Bridge work for railroads is coming out more freely. The 18,000 to 20,000 tons in the tower building of the Union Terminals at Cleveland has been placed. Although large projects are few, a good aggregate is involved in the numerous small awards. Inquiries are more numerous.

Although the effort to stiffen prices continues in various districts, Chicago fabricators have forced plain material down from 2.10c to 2.00c, Chicago. Fabricated prices reflect keen competition. As low as $66 a ton delivered having been quoted recently in a Michigan territory on a large job, involving general beam and column fabrication.

STRUCTURAL SHAPE PRICES, PAGE 590

New York, March 2.—Although current buying is light, structural work is coming out in better volume with prospects that March will be the best here since December. Specifications against bookings made during the abnormal rush last fall, when fabricators eliminated the policy of quoting on the pound price basis, are coming into the mills, enabling them to operate at a good rate. Prices on shapes are nominally unchanged at 1.90c, Pittsburgh, on the general run of work under nogotiation.

Boston, March 2.—While most fabricating shops are busy on old orders, the unfinished tonnage has gradually diminished and new contracts during the past week have been few. Warehouses are buying on a hand-to-mouth basis and fabricators are evidently waiting for further developments.

Philadelphia, March 2.—Structural shape business is not sufficient to engage fully the mills, but makers are taking a firmer stand on prices. The leading interest is quoting 1.90c to 2.00c Pittsburgh for second quarter tonnage but so far not much demand is noted. Independents are quoting 1.90c Pittsburgh on March business and in some cases 1.85c eastern mill. Prices range from 1.90c to 2.05c base mill.

Chicago, March 2.—More structural steel work moved from the pending to the award class in the past week than in the preceding three weeks, the American Bridge Co. alone taking over 7000 tons. The building industry, so far as steel is concerned, shows more life. Competition among fabricators remains sharp and in some instances fabricators have pushed the shape price down to 2.00c, Chicago. The open market quotation is unchanged at 2.10c, but is none too firm. One fabricator has been mentioning the probability of increased prices. Specifications for spring work have been coming more freely to the mills during the past week.

Cleveland, March 2.—Awarding of 18,000 to 20,000 tons of structural steel for the tower building of the Union terminals project to American Bridge Co. features the current market. John Gill & Sons have been awarded the general contract. This action is expected to precipitate into the market many jobs which have been awaiting the outcome of price competition on this tonnage. New inquiries are few but pending tonnage is large. Plain material is reported firm at 1.90c Pittsburgh with 2.00c asked on small lots although extreme weakness in fabricated and delivered prices indicates a lower base is being figured. A job recently placed in Michigan territory is reported to have gone at $66 a ton delivered.

Pittsburgh, March 2.—Fabricators here still are anxious for business, as is indicated by low bids filed. Awards in this territory were fewer this week but attractive tonnage is scheduled for letting before another ten days. Plain material minimum is firm at 1.90c.

Awards Compared

	Tons
Awards this week	43,960
Awards last week	33,771
Awards two weeks ago	17,221
Awards this week in 1925	18,798
Average weekly awards, Feb.	25,203
Average weekly awards, 1926	23,350
Total awards to date, 1925	339,527
Total awards to date, 1926	230,763

CONTRACTS PLACED

18,000 to 20,000 tons, tower building of Union terminals project, Cleveland, awarded American Bridge Co. through John Gill & Sons, general contractors.

5000 tons, second section boiler room, turbine room and transformer house divisions and third section switch house division, Commonwealth Edison Co., Crawford Avenue power station, Chicago, to American Bridge Co.

2214 tons, following projects: Loft building 311 Seventh avenue, New York, to Taylor-Fichter Steel Construction Co.

Substructure for Broadway temple, Broadway and 173rd street, New York, to George A. Just Co.

Alterations for garage of Lyons brewery, 107th street, New York, to George A. Just Co.

1500 tons, Acca temple, Richmond, Va., to Phoenix Bridge Co.

1400 tons, approximately, are involved in the following two projects:

12-story apartment, University place, between East Ninth and East Tenth streets, New York; to A. E. Norton Inc.

15-story loft 252-54 West Thirtieth street, New York, to Hay Foundry & Iron Works.

1400 tons, additions to Crane Co. plant at Corwith, Ill., to American Bridge Co., William Adams Co., 209 South LaSalle street, Chicago, general contractor.

1000 tons, Breakers hotel, Palm Beach, Fla., placed by the Turner Construction Co., with the Virginia Bridge & Iron Co.

900 tons, bridgework for the Southern railway, 150 tons to the American Bridge Co., and 750 tons to an unnamed fabricator.

800 tons, Lincoln Field Jockey club building, Steger, Ill., to the American Bridge Co.

800 tons, addition to Grant building, San Francisco, to Moore Shipbuilding & Dry Dock Co.

800 tons, theater and office building, Seventh and Hill streets, Los Angeles, to Llewellyn Iron Works.

700 tons, theater, San Diego, Calif., to Moore Shipbuilding & Dry Dock Co.

660 tons, warehouse, American Sugar Refining Co., Brooklyn, N. Y.; to Jones & Laughlin Steel Corp.

625 tons, deck and through girder spans for 1926 bridge requirements of St. Louis-San Francisco railroad, to American Bridge Co.

610 tons, girder and riveted truss spans for 1926 bridge requirements of St. Louis-San Francisco railroad, to Virginia Bridge & Iron Co.

600 tons, manufacturing building, Aromingo and Tulip streets, Philadelphia, to McClintic-Marshall Co.

500 tons, theater and store building for E. L. Doheny and associates, Los Angeles, to Llewellyn Iron Works.

500 tons, addition to Pacific Rolling Mill Co. fabricating shops, San Francisco, to Pacific Rolling Mill Co.

415 tons, Moffitt bridge near Passaic, N. J., to McClintic-Marshall Co.

400 to 500 tons, substation for the New York Edison Co., New York, to the Hedden Iron Construction Co.

400 tons, two crushing plants for Pickands, Mather & Co. at Palmer, Mich., and McKinley, Minn., to Worden-Allen Co.

400 tons, power house, for the DuPont Engineering Co., Lodi, N. J., to the Belmont Iron Works.

400 tons, transmission towers for the Niagara-Lockport Power Co., to Archbold-Brady Co., Syracuse, N. Y.

400 tons, Chester Lace Mills, Chester, Pa., to Belmont Iron Works.

350 tons, new cotton mill at New Bedford, Mass., to United States Machinery Co., New Bedford, Mass., formerly reported awarded United States Machine Co.

350 tons, Freeman hotel, Springfield, Mass., to McClintic-Marshall Co.

340 tons, Scottish Rite temple, Des Moines, Iowa, to Pittsburgh-Des Moines Steel Co.

200 tons, dancing pavilion, Salt Lake City, to Minnesota Steel & Machinery Co.

200 tons, high school, Williamsport, Pa., to an unnamed fabricator.

200 tons, addition to the Famous Department store, McKeesport, Pa., to the Guibert Steel Co.

150 tons, factory building, Holyoke, Mass., to McClintic-Marshall Co.

150 tons, theater, Wilshire and Lebrea, streets, Los Angeles, to Union Iron Works of Los Angeles.

146 tons, shapes and reinforcing bars, Lewis county bridge, Washington, to unnamed fabricator.

125 tons, bridge for the New York Central, Oakfield, N. Y., to an unnamed fabricator.

115 tons, deck plate girder spans for Missouri-Pacific railroad, to American Bridge Co.

110 tons, Y. M. C. A. building, Mason City Iowa, to Rock Island Bridge & Iron Works.
100 tons, Graphic Arts building, Oakland, Calif., to Judson Mfg. Co.
100 tons, addition to pattern shop for the Elliott Co., Jeannette, Pa., to the Guibert Steel Co.
100 tons, highway bridge at Bancroft, Mich., for the Michigan State Highway commission, to the American Bridge Co.
100 tons, warehouse, Elizabeth, N. J., to H. R. Goeller.

CONTRACTS PENDING

2700 to 3000 tons, bridgework for the Louisville & Nashville railroad, Louisville, Ky., bids close March 6.
2500 tons, smelter for Phelps, Dodge Co., Douglas, Ariz.; bids being received.
1500 tons, hall of Records, Newark, N. J., previously noted as involving 700 tons; pending.
1200 tons, Beaux Arts building, Los Angeles; bids being received.
1100 tons, Scottish Rite temple, Oak street, Oakland, Calif.; bids will be taken next week.
1000 tons, Delaware river bridge, miscellaneous work, Philadelphia; bids open March 3.
1000 tons, addition to Hollenden hotel, Cleveland; award expected this week.
900 tons, apartment, 127 West Seventy-ninth street, New York; pending.
900 tons, annex to the General Forbes hotel, Pittsburgh; bids now being asked.
525 tons, Hale Brothers addition, San Francisco; bids in.
600 tons, 1861 University Avenue Corp. apartment, East Ninety-sixth street, New York; pending.
500 tons, telephone exchange, Jersey City, N. J.; pending.
500 tons, Franklin building Oakland, Calif.; bids in.
400 tons, addition to the National Radiator Co., New Castle, Pa.; bids being compiled.
385 tons, Webster Hall apartment building, Pittsburgh; held over for another week.
300 tons, Masonic building, New Haven, Conn.; pending.
300 tons, library, Wesleyan university, Middletown, Conn.; pending.
300 tons, school of aeronautics, New York university, New York; plans revised.
300 tons, exposition building, Philadelphia; pending.
273 tons, bridge over Rio Hondo, near Los Angeles; bids in March 22.
250 tons, bridge for the Pennsylvania railroad; pending.
200 tons, agricultural building State fair grounds, Columbus, O.; pending.
200 tons, miscellaneous bridgework for the New York Central; bids asked.
150 tons, Mack garage, Worcester, Mass.; bids being taken.
150 tons, theater, Maplewood and Western avenues, Los Angeles; bids being received.
150 tons, Riley apartment, Cherokee street, Los Angeles; bids being taken.
110 tons, Tremont street bridge, Boston; bids being taken.
100 tons, bridgework for the Central of New Jersey; pending.
Unstated tonnage, St. John college high school, Brooklyn, N. Y.; pending.

Complete Organization of Forging Company

Chicago, March 2.—Organization of the Standard Forgings Corp., Chicago, the holding corporation for the Standard Forgings Co., Chicago and St. Louis Forgings Co., East St. Louis, Ill., has been completed.

George E. Van Hagen, who has been president of the Standard company, is now also president of the corporation. C. R. Lewis is vice president, L. C. Ryan vice president and treasurer, A. C. Stockton vice president and secretary, and C. E. Jernberg assistant secretary.

Directors include the first four, Maurice C. and Julian A. Pollak, Cincinnati, and C. J. Hardy, New York. There are 60,000 preferred and 160,000 no-par common shares, the capitalization being between $5,000,000 and $6,000,000.

Pollak Steel Co., Cincinnati, which relinquishes management and operation of its plant at South Chicago, Ill., to the Standard Forgings Corp., Chicago, as announced in IRON TRADE REVIEW Feb. 18, will concentrate its manufacturing activities at its works in Marion, O. Headquarters of the Pollak company will continue at Cincinnati. It contemplates further development, improvement and extension of its plant at Marion.

Concrete Bars

Inquiries on Increase But Awards Remain Few—Road Work More Active

INQUIRIES in the concrete bar market are more numerous but mostly small. Awards continue restricted to scattered lots. Definite award has been made on 2000 tons for the Cleveland union terminals. Road work is much more active. One mill claims 25,000 tons of this work is on the books with specifications in hand, awaiting shipping orders.

REINFORCING BAR PRICES, PAGE 590

Pittsburgh, March 2.—Concrete bar projects are on the increase, numerous ones taking 15 to 25 tons. Several hundred tons are involved in the apartment building for the Fifth Avenue Apartment Corp., and a smaller tonnage will be needed for a hotel at Rochester, Pa., about to come up for bids. The price is 2.00c, with 2.10c on new billet bars the indicated figure for second quarter.

Chicago, March 2.—Reinforcing bar warehouses look to the approach of milder weather to augment business, which continues considerably below the level of 1925. The general steel price situation is a factor in the delay attending new work. It is believed that most if not all of the 800 tons of bars for Illinois road work on which bids were opened recently will go rail steel. Several large industrial projects have been placed quietly. Billet steel bars are quoted at 2.60c, Chicago warehouse, and rail steel at 2.00c.

Cleveland, March 2.—Concrete reinforcing bar buying continues slow, spring activity being delayed by bad weather. Roadbuilders are beginning to become uneasy due to large tonnages required this year, and are starting to request deliveries on specifications sent mills last fall. New contracts are few. A good aggregate tonnage is pending. New billet bars are unchanged at 2.19c to 2.30c Cleveland. Rail steel is steady at 1.80c to 1.90c mill.

Awards Compared

	Tons
Awards this week	8,690
Awards last week	3,218
Awards two weeks ago	4,742
Awards this week in 1925	5,115
Average weekly awards, Feb.	4,109
Average weekly awards, 1926	4,225
Total awards to date, 1925	56,920
Total awards to date, 1926	42,493

CONTRACTS PLACED

2000 tons, Union terminals work, Cleveland, to Jones & Laughlin Steel Corp. Reported last week awarded unstated mill.
1600 tons, North Venetian Island bulkhead, Florida, and Miami shores causeway, Florida, to European mills. Raymond Concrete Piling Co., New York, contractor.
1200 tons, Equitable Trust building, New York, to Jones & Laughlin Steel Corp. Foundation Co., New York, contractor.
1200 tons, two schools for Philadelphia, previously reported awarded F. R. Phillips, finally distributed as follows: 800 tons to a German mill, 350 tons to McClintic-Marshall Co. and 60 tons to Kalman Steel Co.
1200 tons, Coe Terminal building, Detroit, to Franklin Steel Works, rail steel.
900 tons, Breakers hotel, Palm Beach, Fla., to Gulf States Steel Co. Turner Construction Co., New York, contractor.
750 tons, Davidson Paxson Stokes store, Atlanta, to Kalman Steel Co. Starrett Bros., New York, contractors.
650 tons, in connection with East Bay municipal utility district pipe line, Oakland, Calif., to Truscon Steel Co.
600 tons, St. Charles Borromeo school, Overbrook, N. J., to Concrete Steel Co.
500 tons, roadwork in New York state, to Bethlehem Steel Co.
350 tons, R. H. Macy warehouse, Brooklyn, N. Y., to Concrete Steel Co. Barney-Ahlers Construction Co., New York, contractor.
200 tons, theater at 4112 West Madison street, Chicago, to Calumet Steel Co. Levy & Klein, 111 West Washington street, Chicago, architects.
200 tons, California Montgomery building, San Francisco, to Truscon Steel Co.
190 tons, home for Sisters of Charity, Cincinnati, to Pollak Steel Co.
150 tons, addition to Good Samaritan hospital, Cincinnati, to Pollak Steel Co.
100 tons, addition to Forest Park hotel, St. Louis, to Laclede Steel Co.
100 tons, apartment, Pacific and Laguna streets, San Francisco, to unnamed jobber.

CONTRACTS PENDING

4500 tons, sea-wall, Havana, Cuba; bids due March 15.
500 to 750 tons, apartment for the Fifth Avenue Apartment Corp., Fifth avenue, Craig and Neville streets, Pittsburgh; general contract awarded the Boyle-Robertson Construction Co.
350 tons, Robert Gair & Co. building, Piermont, N. Y.; contractor Turner Construction Co., New York.
200 tons, hotel at Rochester, Pa.; bids about to be asked.
150 tons, Standard Oil buildings, Mill Basin, Long Island, N. Y.; contractor Jos. L. Burke Corp., New York.
130 tons, Youngstown-Fitch garage, Youngstown, O.; Heller Bros. general contractor.
100 tons, Security Fireproof storage warehouse, Brooklyn, N. Y.; contractor R. W. Smith Construction Co., New York.

Rails, Cars

Car Buying Maintaining Higher Rate—Illinois Central Buys 2350—Locomotives More Active

AWARD of 3350 freight cars chiefly by the Illinois Central features the railroad equipment market, maintaining a higher rate than in many months. Locomotives are more active, with 113 for the Southern, 25 for the Reading on inquiry, and 200 rumored for the Pennsylvania. Light rail demand is best in several years. Chicago mills are being pushed for rail deliveries.

RAILROAD TRACK MATERIAL PRICES, PAGE 590

Chicago, March 2.—Of the 12,393 cars placed by the railroads in February western makers were awarded 7950, requiring close to 80,000 tons of heavy steel. The 2300 Illinois Central gondolas and the 500 Chicago & Eastern Illinois gondolas placed in the past week require 25,000 tons of plates alone.

The closing of the 2350 gondolas and cabooses for the Illinois Central disposes of the major portion of pending work here. Active inquiry now includes 1600 for the Southern Pacific, 1000 for the Northern Pacific, 500 for the Burlington, 350 for the Pere Marquette and 200 additional for the Illinois Central. It is stated that the Santa Fe will not buy 500 hoppers as reported. The Chicago & North Western is shaping up a program indefinite at this time.

Tie plates have been the most active of the track fastenings, one maker booking approximately 18,000 tons in the past week. Miscellaneous rail orders booked by Chicago makers totaled 7500 tons. Rail mills find it difficult to keep up with specifications.

New York, March 2.—Car buying is being maintained at an improved rate prevailing over the past three to four weeks. While definite figures are not available, February domestic freight car awards will substantially exceed bookings in January, which approximated 9000 cars. Locomotive demand has improved. Heavier locomotive inquiry includes 25 for the Reading.

New rail inquiries for Japan aggregate over 12,000 tons. The largest involves 6000 tons of 100-pound rails and angle bars for the Imperial Government railways. The Osaka Denki Kido is in the market for 25 miles of 75-pound rails and accessories, totaling 2950 tons. The Nankai railroad is taking bids on 15 miles of 75-pound rails aggregating 1770 tons. The municipality of Tokio has an inquiry out for 1500 tons; it embraces 8 miles of 91-pound, 7-inch high tee-rails and 2 miles of 100-pound guard rails.

Reports persist that the Pennsylvania will come out shortly for a large number of locomotives, freight and passenger cars. Formal inquiry for 200 locomotives is expected within a week in some quarters.

Preliminary estimates for February freight car awards approximate 13,000.

Pittsburgh, March 2.—Light rail sales in February were double those of January, in the experience of some large independent producers. February was the largest month in two or three years in the bookings of billet-rolled light rails. This is expected to grow with expanding of anthracite coal mine operation. The price now is $35 on billet rolled rails.

Philadelphia, March 2.—A heavy tonnage of light rails was placed last week by the anthracite mines. Considerable of this involves specifications on old contracts. This tonnage brought $39 to $41 per gross ton delivered on billet rolled rails and $37 to $39 on rail steel light rails.

ORDERS PLACED

Boston & Maine, 10 gasoline-electric motor passenger cars, to the Osgood-Bradley Car Co.

Brooklyn-Manhattan Transit Co., 67 articulated units comprising 201 subway steel car bodies, each unit including four trucks with motors mounted on these trucks, placed, car bodies and trucks going to Pressed Steel Car Co., and motors and electric control equipment to General Electric Co.

Chicago & Eastern Illinois, 500 hopper cars, to the Mt. Vernon Car Mfg. Co.; this company is rebuilding 1500 hopper cars in its own shops.

Great Northern, 250 underframes, to the Siems-Stemble Co., division of the Standard Steel Car Co.

Illinois Central, 2350 as follows: 600 general service to Standard Steel Car Co., 500 general service each to Pullman Car & Mfg. Corp., Mt. Vernon Car Mfg. Co. and Illinois Car & Mfg. Co., 200 tight bottom gondolas to Ryan Car Co. and 50 cabooses to American Car & Foundry Co.

New York Central, repairs to 10 passenger coaches, to American Car & Foundry Co.

St. Louis-San Francisco, 750 underframes, to Tennessee Coal, Iron & Railroad Co.

New York Central, 500 automobile box cars, to Merchants Despatch Transportation Co.

White Coal Co., 50 to 100 mine cars, to Watt Mine Car Co.

Egyptian State railways, places gondolas with Metropolitan Car Wagon & Finance Co.; inquiry involved 100 to 1000.

LOCOMOTIVE ORDERS PLACED

Canadian Pacific, 44 locomotives, of which 24 went to the Montreal works of the American Locomotive Co., as noted last week, and 20 to the Canadian Locomotive Co.

ORDERS PENDING

Aluminum Co. of America, 18 flat cars; pending.

Illinois Central, 200 automobile furniture cars; pending.

New York, Westchester & Boston, 10 steel electric passenger cars; pending.

Richmond, Fredericksburg & Potomac, four passenger cars and six express cars; bids asked.

Seaboard Air Line, 50 cabooses and 6 passenger-baggage cars; pending.

LOCOMOTIVE ORDERS PENDING

Chicago, Indianapolis & St. Louis, six locomotives; inquiry revised.

Wire

Buying Is Slow but Prices Are Firm in Face of Small Stocks—Demand Is Steady

SINCE mills, jobbers, retailers and users have small stocks prospects are that demand will keep production at least at the present rate, with possibility of an increase. Second quarter buying as such is not being done largely but current contracts now being made really mean delivery in that period. Prices are firm and nailmakers find no profit in that conversion.

WIRE PRICES, PAGE 590

Chicago, March 2.—Low stocks, from mills to retailers, encourage makers of wire and nails to look for good second quarter business. Shipments in February exceeded those of January and about equaled those of last February. Manufacturing lines continue to move more rapidly than jobbing. The annual report of farm country business being hampered by bad weather is afloat. Western wire mills are operating about 65 per cent. Nothing official on second quarter prices has been uttered but business now being taken at 2.55c, Chicago or western mill, for plain wire and 2.70c for wire nails falls into second quarter delivery.

Boston, March 2.—The week's specifications for wire and wire products were the best of the year. Nail demand continues good. Prices are unchanged, plain wire selling at 2.65c Worcester.

Pittsburgh, March 2.—Occasional renewals of 60-day contracts by wire products jobbers and some new orders for various wire products, make up what little activity is being enjoyed by producers. Selling cement-coated nails on the nail base and in 100-pound kegs has proven satisfactory to all customers. Manufacturers are taking out most of their material on first quarter contracts but have made no start on second quarter arrangements. Prices are unchanged at 2.50c on plain wire and 2.65c on wire nails, the latter becoming firmer as makers find that even at that figure they are converting $45 rods into nails at a big loss. Operation is on the basis of 70 to 75 per cent this week at plants in this district.

Nonferrous Metals

Prices Sag With Market Quiet and Consumers Buying on Hand-to-Mouth Basis—Shipments and Output Still Heavy

Prices of the Week, Cents a Pound

	Copper—Electro delivered	Copper—Lake delivered	Copper—Casting refinery	Spot Straits Tin, N. Y.	Lead New York	Lead East St. Louis	Zinc St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
Feb. 24	14.25	14.37½	13.62½	64.25	9.12½	8.80	7.75	27.00	21.50	35.00
Feb. 25	14.25	14.37½	13.62½	64.25	9.00	8.75	7.72½	27.00	21.50	35.00
Feb. 26	14.25	14.37½	13.62½	64.37½	9.00	8.75	7.60	27.00	21.00	35.00
Mar. 1	14.25	14.37½	13.60	64.75	9.00	8.75	7.50	27.00	21.25	35.00
Mar. 2	14.12½	14.25	13.50	64,37½	8.90	8.65	7.37½	27.00	21.37½	35.00

NEW YORK, March 2.—Buying of nonferrous metals has been quiet the past week and prices have sagged. Shipments in all lines continue good, with output and use generally unchanged. Buyers are proceeding more on a hand-to-mouth basis than they have been. Most of them are well protected on immediate needs, and with supplies of good size they appear to think they are not likely to lose much on rising prices.

Mill products—Copper wire mills report moderate but steady buying, mostly for early shipment, but with power companies in the north going into the future a little. Brass mills have fair order books for the moment but are shipping more rapidly than orders are coming in. Orders for steel for building purposes are reported good, and that is an important indication for other metals. Sales of electric equipment are large. Lead sheets and pipe have been cut ¼ cent in accord with pig lead.

Zinc—Zinc has slipped from its recovery of a few days ago as not a great deal of buying has been done by users of prime western. High grade is unchanged and brass special is about 1/10 to ⅛ cent differential. The London market did not rise as much as the market here, and then fell also, so that exports are not indicated for the immediate future. Output still is big.

Tin—The statistics for February show a continued tight situation in supplies, but not quite so strong as traders had expected. World visible supplies were cut 548 tons to 16,239 tons, but gossip had it that the figure would be cut 1000 tons. Deliveries in this country in February were 6250 tons, a comparatively light figure for this time of year, but these deliveries were limited on account of the fact the month's arrivals of 7530 tons were largely in the latter few days of the period. With these, big arrivals and landing went up considerably to 3399 tons, but most of this metal evidently was well sold as near-by continued to sell far above future shipments. With spot and nearby selling at 64.37½ cents to 64.87½ cents, futures have been 62.12½ cents to 62.62½ cents.

Copper—With buying a little bit slow lately, most producers have eased their prices from around 14.37½ cents to 14.12½ cents, delivered Connecticut (⅛ cent higher in the Middle West). Some metal has been available right along at 14.25 cents for more than a week, but it is only in the past few days that some of the large producers have become ready sellers at that figure. The export market is slow. Some low prices have been heard on refinery basis but they are mostly for small lots.

Lead—Prices on this metal have eased off. After the open market has come down a few points, the American Smelting & Refining Co. cut a little further, and the open market has been adjusted to the Smelting company level. Buying has been light and supplies plentiful, and yet some of the larger smelters have little metal available for prompt shipment.

Scrap—The situation in old metals has been rather spotty. At times brass and copper scrap look firm and a large amount of metal is moving, but neither the copper market nor foundry work has sufficient life for a strong market. Prices are lower.

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
High brass	19.12½
Copper, hot rolled	22.75
Zinc, ga. 9 to 17	12.00
Lead full sheets (cut ¼c more)	12.75 to 13.25
Aluminum, bright flat, up to 10 gage	37.50
SEAMLESS TUBES	
High brass	23.75
Copper	24.50
RODS	
High brass (round ⅝ to 2½-inch)	16.87½
Naval brass	19.62½
WIRE	
Copper	16.25 to 16.50
High brass	19.62½

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	9.00
Chicago	9.75
Cleveland	9.00 to 9.25
HEAVY YELLOW BRASS	
New York	7.25
Chicago	8.25
Cleveland	6.50 to 6.75
ZINC	
New York	5.00
Cleveland	4.50 to 4.75
HEAVY COPPER AND WIRE	
New York	12.00
Chicago	11.75
Cleveland	11.25 to 11.50
RED BRASS BORINGS	
New York	8.25
YELLOW BRASS TUBING	
Cleveland	7.00 to 7.25
LIGHT COPPER	
New York	9.50
Chicago	10.00
Cleveland	9.50 to 9.75
LIGHT BRASS	
Chicago	7.50
Cleveland	6.00 to 6.25
ALUMINUM	
Borings, Cleveland	14.00 to 15.00
Cast	18.00 to 19.00
Clippings	21.00 to 22.00

Secondary Metals

Remelt aluminum No. 12	24.00 to 25.00
Brass ingot	12.00 to 12.25

Coke By-Products

Market Is Strong—Advance In Distillates Expected

New York, March 2.—A strong tone prevails in distillates and advances in the near future are expected in some quarters. Strength is afforded by recent advances in motor benzol and by prospects of an early shrinkage in production as a result of falling off in coke demand. Demand continues brisk.

Ninety per cent benzol is holding at 24 cents, works, in tanks and 29 cents in drums; pure benzol at 23 cents, works, in tanks, and 28 cents in drums; solvent naphtha and toluol 35 cents, works, in tanks, and 40 cents in drums: and commercial xylol, 36 cents in tanks and 41 cents in drums.

Strength prevailing throughout the coal tar by-products market is being extended to sulphate of ammonia, of which supplies are scarce. Prices are nominally unchanged at $2.70 to $2.75, delivered on material for domestic account and $2.70 to $2.75 port, on material in double bags for export. Spot demand is light.

Spring buying of naphthalene continues in good volume, with prices strong at 7 cents, works, for flakes in carload lots and 8 cents for balls. On smaller quantities prices are ½ to 1 cent higher.

Coke Oven By-Products

Per Gallon at Producers' Plants in Tank Lots

	Spot	Contract
Pure benzol	$0.23	
90 per cent benzol	0.24	
Toluol	0.35	
Solvent naphtha	0.35	(nominal)
Commercial xylol	0.36	(nominal)
Phenol	0.22	0.22
Per Pound at Producers' Plants		
Naphthalene flakes	0.07	
Naphthalene balls	0.08	
Per 100 Pounds Delivered		
Sulphate of ammonia	$2.72½	

Coast Inquiry Is Heavy

Three Weeks of Quiet Followed by Unusually Large Demand for Steel and Pipe

SAN FRANCISCO, Feb. 25.—(By Air Mail)—Featuring the iron and steel markets on the Pacific Coast this week were several large lettings of plates and structural shapes and calls for bids on a number of cast iron pipe, steel pipe and structural shape projects. The past three weeks, taken as a whole, has been a quiet period but with the coming of spring numerous plans are coming forth for figures and the trade is hopeful as regards the outlook for first half. Prices in most lines are firm.

Pig Iron and Coke

During the past week 100 tons of special analysis English iron and 354 tons of special analysis India iron have arrived in port, with 4000 tons of English coke which will be discharged in three Pacific Coast ports. Current inquiries and sales have been confined to small spot lots. Because of the proximity of the Utah blast furnace of the Columbia Steel Corp. and the consequent ease of getting quick deliveries, consumers of iron are not now anticipating requirements to the degree that was necessary several years ago. Sales are therefore usually confined to relative small lots. The Southern Pacific Co. opened bids this week on 350 tons of foundry coke. Prices remain unchanged from those quoted last week. Cable reports state that France, Belgium and Luxemburg have established prices on pig iron at Antwerp at 340 francs, about $15.40. According to this the c.i.f. price Pacific Coast ports would be around $22.

Coast Pig Iron Prices

Columbia basic	$27.00 to 28.00
Columbia, No. 2 Fdry., San Francisco and Los Angeles	27.00 to 28.00
Anzan No. 1 (Chinese) 2.50 to 3.50 sil. Del. S. F.	25.50
Anzan No. 1 (Chinese) 2.50 to 3.50 sil. Del L. A.	26.00
*Dutch	24.00
*Indian iron	24.25
*Belgian	24.00
German	24.00
*English (2.75 to 3.75 sil.)	25.00 to 26.00

*C.I.F. duty paid.

Bars, Plates and Shapes

Distributors in the San Francisco district are now holding firm to the established levels on concrete bars as follows. In lots of 250 tons or more 2.80c; in carload lots 2.95c; in less than carload lots 3.20c. One large jobber reports the last three weeks as being one of the quietest periods experienced in over three years, but states that a decided increase in activity has taken place during the last day or two. Awards this week aggregated over 900 tons, the largest involving 650 tons for the East Bay pipe line project, placed with Truscon Steel Co.

A number of projects involving from 100 tons to 12,000 tons of plates are up for figures and this particular market is perhaps more active than that for any other class of material. Awards exceeded 3800 tons. The Western Pipe & Steel Co. took 3300 tons for a lock-bar pipe line at Fairbanks, Alaska and in connection with Ferrum Co. of Germany secured 3500 tons for the Feather River Power Co. penstock. The largest job since the award of the East Bay pipe line, involving 75.000 tons, comes up for figures March 22. This calls for 12,800 tons for the San Diego pipe line. A penstock for Los Angeles requires 1500 tons, a pipe line at Medford, Oreg., 3000 tons, storage tanks for the Union Oil Co., Los Angeles, 2020 tons and a pipe line for San Rafael, Calif., 1400 tons. Total pending business is in excess of 21,000 tons. Prices appear fairly firm at 2.30c c.i.f. although a somewhat lower price is expected to appear on the heavy tonnages now up for figures.

Shape awards totaled 2400 tons, the largest projects including 800 tons for a theatre in Los Angeles, booked by the Llewellyn Iron Works, and 700 tons for a theater in San Diego, Calif. ,placed with the Moore Drydock Co. Pending business calls for over 12,000 tons, including 2500 tons for a smelter at Douglas, Ariz., 1200 tons for the Beaux Arts building in Los Angeles and 1100 tons for the Scottish rite temple in Oakland. Prices are firm at 2.35c c.i.f. Coast ports.

Other Finished Material

Featuring the cast iron pipe market this week was the award of 733 tons of De Lavaud pipe for Bellingham, Wash., to the United States Cast Iron Pipe & Foundry Co. Awards totaled over 900 tons. Pending business exceeds 27,000 tons. New inquiries of the week include 5850 tons for Portland, 3500 tons for Laguna Beach and 3100 tons for Los Angeles. This is the heaviest tonnage up for figures in the history of the Coast.

Northwest Buys Little

SEATTLE, Feb. 25.—The turnover in iron and steel is not showing marked activity but the market continues firm and indications are for increased volume of trade. General conditions are favorable. There are no labor troubles in the Pacific Northwest, unemployment is decreasing with the opening of spring work and the prospects for a good season in Alaska are bright.

The lumber business is not improving as rapidly as was expected. Prices are not firm and new business is not as great as is usual at this season. Foreign markets are off and ocean freights are weak. Several large logging camps have closed recently but other plants have reopened so that labor employed in lumbering remains about at a standstill. However, with the demand for labor in Alaska and the agricultural sections the unemployment situation is improving.

Pig Iron and Coke

The market shows no change. While foundry operations are increasing stocks are large and there is little interest in pig iron or coke. Foreign coke is offering at $14 delivered here and some imported material is afloat for arrival next month.

Bars, Plates and Shapes

While construction is creating a normal demand for reinforcing material, the jobbing trade is not placing heavy orders for bars. However, the market appears firmer, representatives of eastern mills reporting that prices have advanced from 2.30c to 2.35c. No large tonnages of bars are pending but within 30 days construction work to be announced is expected to call for considerable reinforcing. The local mill reports the same operations and an unchanged mill price of 2.35c.

Plates and shapes are firm at 2.30c and 2.35c respectively, no cutting being reported. In addition to the Medford, Ore., plate job now pending, a Seattle water pipe job is soon to be awarded, involving 200 tons. The Masonic home contract, requiring both reinforcing and structurals, has not yet been awarded. The Wallace Equipment Co. has the contract for a cutting edge caisson involving 40 tons of steel for the Vantage Ferry bridge. Several bridge contracts are up for figures, contracts to be awarded shortly but none for large tonnage. The bridge contract in Lewis county, awarded by the state last week, requires 60 tons of reinforcing and 86 tons of structural material.

Puget Sound Machinery Depot, Seattle has been given an order by the Great Northern railroad for two cylinders 8 feet in diameter and 122 inches long and two tanks seven feet in diameter and 35 feet long for its creosoting plant at Somers Mont. They are to be fabricated of steel plates 1 to 1½-inches thick and will require about 300 tons.

The Indiana Tinware Co. at Indianapolis, has reduced its capital stock from $30,000 to $20.000.

French Steel Exports Heavy

Bar Shipments of 185,940 Tons in January Set Record—Mills Booked Three Months Ahead—British Firm Takes 15,000 Tons of Railroad Ties for Egypt—Pig Iron Easier as American Coke Purchases Decline

European Headquarters,
IRON TRADE REVIEW,
2-3 Caxton House, Westminster, S. W.1

LONDON, March 2.—(*By Cable*)—The settlement of the coal strike in the United States has affected the British pig iron market, indirectly. Coke shipments to American consumers have fallen off, and easier coke prices here have weakened the market for hematite. But due to recurring fears of a coal strike in Great Britain in the spring there is a lull in buying.

Dorman, Long & Co. have booked 100,000 steel ties for the Egyptian state railways, amounting to about 15,000 tons. British builders of rolling stock are busy, relieving the acute scarcity of cars that has been delaying transportation. Makers of galvanized sheets are booked full practically up to the end of March.

Advancing prices of reparations coke in France are increasing pig iron costs. Furnaces and mills are refusing orders, due to the political and financial instability. Exports are good; shipments of steel bars in January amounted to 185,940 tons and set a record. Bar mills are booked three months ahead.

Labor difficulties in the Charleroi district in Belgium have been settled and operations now are normal. A message from Berlin reports that the formation of a rail syndicate by French, German and Luxemburg mills is nearly complete, and is expected to be operative in a month. German steelworks are more active, mainly on export orders.

British Market Feels Impetus of New Demand

Office of IRON TRADE REVIEW,
Prince's Chambers, Corporation St.,

BIRMINGHAM, Eng., Feb. 18—(*European Staff Service*)—The market has been sentimentally assisted by a number of shipbuilding orders, including several for first class liners, placed during the past week. The tonnage of steel represented is insignificant from the point of view of mill capacity, but its importance consists in the obvious suggestion that Britsh shipbuilding

Sterling $4.86

is getting its head above water, so to speak, in the field of international competition. A few orders and inquiries relating to recent shipbuilding contracts have already reached the mills.

The rail mills are busier than for some time, and leading plants have two to three months work on hand. The home railways are, at present, the most important customers for steel, taking a good deal of general material, and regularly issuing inquiries connected with bridge and station reconstruction.

It is obvious that the relation with the Continent in the matter of steel competition is likely to undergo some change. For several weeks, we have been assured by continental exporters

(*Concluded on Page* 618)

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, March 1	*British* Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable								
PIG IRON		£ s d		Francs		Francs		£ s d
Foundry No. 3, Silicon 2.50-3.00	$17.01	3 10 0*	$14.50	395	$15.47	340	$17.01	3 10 0
Basic	16.28	3 7 0	12.73	347	15.47	340	15.07	3 2 0
Basic-bessemer	18.59	3 16 6†	14.83	405	14.56	320	17.01	3 10 0
Hematite, Phosphorus 0.02-0.05	20.41	4 4 0	20.37	555	.....	...	18.23	3 15 0
SEMIFINISHED STEEL								
Billets	$26.73	5 10 0	$21.65	590	$21.84	480	$24.30	5 0 0
Wire rods	43.74	9 0 0	28.63	780	28.89	635	27.95	5 15 0
FINISHED STEEL								
Standard rails	$35.24	7 5 0	$22.75	620	$27.30	600	$32.08	6 12 0
Merchant bars	1.49c	6 17 6	1.16c	700	1.17c	570	1.18c	5 7 0
Structural shapes	1.33c	6 2 6	1.03c	620	1.07c	520	1.09c	4 19 0
Plates, ship, bridge and tank	1.52c	7 0 0	1.29c	775	1.22c	590	1.32c	6 0 0
Sheets, black, 24 gage	2.22c	10 5 0	2.24c	1,350	2.27c	1,100	2.64c	12 0 0
Sheets, galvanized, 24 gage, corrugated	3.50c	16 2 6	3.32c	2,000	4.53c	2,200	3.64c	16 10 0
Bands and strips	2.17c	10 0 0	1.43c	860	1.50c	730	1.54c	7 0 0
Plain wire, base	2.39c	11 0 0	1.93c	1,160	1.65c	800	1.71c	7 15 0
Galvanized wire, base	3.04c	14 0 0	2.59c	1,560	2.27c	1,100	2.04c	9 5 0
Wire nails, base	3.15c	14 10 0	2.16c	1,300	1.75c	850	1.76c	8 0 0
Tin plate, base box 108 pounds	$ 4.74	0 19 6	.....	...	.....	...	$ 6.56	1 7 0
Domestic Prices at Works or Furnace—Last Reported								Marks
Foundry No. 3 Pig Iron, Silicon 2.50-3.00	$17.01	3 10 0	$14.50	395(2)	$15.02	330	$19.55	85
Basic pig iron	16.28	3 7 0	15.41	420(1)	14.56	320	20.24	88
Furnace coke	3.89	0 16 0	5.65	154	5.23	115	5.06	22
Billets	26.73	5 10 0	20.19	550	21.84	480	27.37	119
Standard rails	1.63c	7 10 0	1.12c	675	1.30c	630	1.48c	142
Merchant bars	1.49c	6 17 6	1.16c	700	1.22c	590	1.35c	129
Shapes	1.44c	6 12 6	1.05c	635	1.17c	570	1.40c	134
Plates, ship, bridge and tank	1.55c	7 2 6	1.29c	780	1.33c	645	1.49c	143
Sheets, black, 24 gage	2.33c	10 15 0	2.20c	1,325	2.21c	1,075	2.14c	205
Sheets, galvanized 24 gage, corrugated	3.55c	16 7 6	3.24c	1,950	4.64c	2,250	3.96c	380
Plain wire	2.39c	11 0 0	1.91c	1,150	1.65c	800	1.85c	177
Bands and Strips	2.28c	10 10 0	1.40c	845	1.58c	765	1.59c	152

*Middlesbrough; †Scotch foundry iron; (1) Basic-bessemer; (2) Longwy. British export furnace coke £0 16s 0d ($3.89) f. o. b. Ferromanganese £15 5s 0d ($74.12) f. o. b. German ferromanganese £14 10s 0d ($70 47) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semi-finished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

Machinery

Railroads Provide Much of February Equipment Activity—Inquiries Forecast Good Business for March—More Cranes Sold

ALTHOUGH no large sales are noted, general buying of equipment continues in steady volume. Some manufacturers and dealers report the month just passed will rank on a par with recent months although in the majority of cases some recession took place. Railroad buying of equipment still is the feature of the market. Atchison, Topeka & Santa Fe, Chicago, Rock Island & Pacific, Chicago & Eastern Illinois, and Chicago & Northwestern have figured in tool buying. Westinghouse Electric & Mfg. Co. has about completed its buying for first quarter and has started work on its second quarter list. Automobile manufacturers have boosted production schedules in the last 10 days, but equipment buying has fallen off. Used tool demand is good.

New York, March 2.—Although still devoid of large lists, machine tool business continues active, with inquiries numerous. The month just closed showed a gain over January, in the experience of some leading sellers, and considering the wide character of demand was particularly gratifying. Recent orders include a 32-inch drill press for the New York Central, clip riveting machine for the United States Metals Refining Co., New York City; and a journal turning and axle lathe for the Pullman Car & Mfg. Co., Chicago, all going to the Niles-Bement-Pond Co. The Monroe Calculating Machine Co., Orange, N. J., has closed on a 13-inch geared head lathe, and the Westinghouse Electric & Mfg. Co., Springfield, Mass., on a 13-inch geared head lathe and a 14-inch vertical surface grinder, both orders going to the Pratt & Whitney Co. Atchison, Topeka & Santa Fe has closed on further business to Manning, Maxwell & Moore, Inc., including three drills, one side rod milling machine, one 42-inch boring mill and two portable lathes. This builder has also been awarded an engine lathe, a boring mill and a turning boring mill by Chicago, Rock Island & Pacific; a gap lathe by American Brown Boveri Electric Corp., Camden, N. J., a heavy duty surface grinder by New York Central railroad; a car wheel borer and a coach wheel lathe by Brooklyn City Railways, Brooklyn and a single end punching shear by the Chicago & Eastern Illinois.

Boston, March 2.—Sales of equipment here have been on a lower level and the February total is estimated to be 15 per cent below January. General Electric Co. has bought a die sinking machine and large gap lathe for its works at Pittsfield, Mass. Boston & Albany bought a heavy duty drill for its shops at Brighton, Mass. Blanchard Machine Tool Co., Cambridge, Mass., has purchased a large boring machine.

Pittsburgh, March 2.—With some tool sellers in this territory the past week has been quiet, although a few have found it satisfactorily active. Westinghouse Electric & Mfg. Co. practically has concluded its purchases against the first quarter list, although a few items are being carried over for the second quarter. Preliminary work on its second quarter list has started. Its latest purchases involve a radial drill and a lathe. Outstanding characteristics of today's equipment buying is the desire for prompt deliveries. One house sold a 42-inch lathe with 16-foot bed and a motor-driven all-gear 24-inch drill complete with motor, while another sold a heavy gage shear and a slotter. Some punch and shear inquiries now are up as well as a fairly large number of other single machines, and Pittsburgh & Lake Erie railroad has not as yet bought its large boring mill. Several crane purchases are noted this week, and the newest inquiry is for 12 from a large middle western fabricating shop.

Cincinnati, March 2.—Activity in the tool market here has slowed up during the past few weeks. Despite the lack of orders, several inquiries of consequence are pending, but buyers are reluctant to close promptly. With milder weather, manufacturers expect a revival in activity. Recent sales involved single tools, scattered throughout the list. Plant operations have suffered a slight setback. Little foreign business is making its appearance, but reports from agents indicate orders will be forthcoming shortly. Railroad inquiry is improving, but lists pending involve comparatively few machines. Cincinnati Planer Co. booked a 72 by 20-foot planer for shipment into the New England district. Other builders also reported similar scattered sales.

Chicago, March 2.—Most machinery houses here have closed a February that was the equal of last February. Buying by large manufacturers has been predominant. Railroad inquiry still constitutes the bulk of pending business. Deliveries are somewhat easier. Chicago & North Western railroad has placed about 10 tools, including several lathes, shapers, grinders, and hydraulic bushing presses. Nash Motors Co., Kenosha, Wis., is negotiating for the purchase of equipment, chiefly drills.

Cleveland, March 2.—February business continues at a steady pace throughout the month and the total sales in most cases were up to level of recent months. Inquiries forecast good activity in March, although the first few days have been comparatively quiet. Purchases of the automobile manufacturers have slowed down as production schedules are increased. Used tools hold in steady demand. A crane builder reports large sales.

CRANE ORDERS PLACED

Twelve crane bridges, including one 50-ton and eleven 25-ton, for Baldwin Locomotive Works, Philadelphia, to Niles Crane Corp.; for installation at Eddystone plant to carry trolleys now at Philadelphia plant.

Eight traveling cranes, including two 20-ton with 5-ton auxiliary, one 5-ton, three 7½-ton double trolley, two 5-ton double trolley, for new bar mills of Illinois Steel Co., Gary, Ind., to Alliance Machine Co.

Four 7½-ton wall cranes for Eddystone plant, Baldwin Locomotive Works, to Milwaukee Electric Crane & Mfg. Corp.

Three 15-ton cranes for Pittsburgh Crucible Steel Co., Midland, Pa., to Morgan Engineering Works.

Two 10-ton power house cranes for Texas Utilities Co., Lubbock, Tex., to H. D. Conkey & Co. through Menner & Kimball, St. Louis.

Two cranes, including 3-ton gantry and 5-ton traveling, for Chicago & North Western railroad, to Milwaukee Electric Crane & Mfg. Corp. through Page & Ludwick, Chicago.

Two 15-ton cranes for Woodlawn, Pa., plant of Jones & Laughlin Steel Corp., understood to have been awarded Cleveland Crane & Engineering Co.

Among single orders were: 5-ton crane for Standard Sanitary Mfg. Co., New Brighton, Pa., to Cleveland Crane & Engineering Co.; 5-ton crane for Westinghouse Electric & Mfg. Co., Sharon, Pa., to Whiting Corp.; 30-ton locomotive crane for Texas Construction Co., Dallas, Tex., to American Hoist & Derrick Co.; pile driver for Erie railroad to American Hoist & Derrick Co.; 25-ton locomotive crane for Sanford & Brooks, Baltimore, to Browning Crane Co.; 35-ton electric overhead crane for Northern Power Co., Worcester, Mass., to Northern Engineering Works; 3-ton cab controlled electric hoist for Lohawk Conduit Co., Cohoes, N. Y., to Shepard Electric Crane & Hoist Co.; 12-ton used crawler crane for Manitoba Pulp & Paper Co., Fort Alexandria, Manitoba, Can., to Philip T. King; 40-ton used locomotive crane for Dominion Bridge Co., Montreal, to Philip T. King; 12-ton gasoline crawler crane, noted last week as placed with Industrial Works, was purchased by Parker & Graham, Paterson, N. J.; 40-ton electric crane for Farrell Foundry & Machine Co., Ansonia, Conn., to Shaw Electric Crane Co. 12-ton open-hearth charging crane for Tennessee Coal, Iron & Railroad Co., Fairfield, Ala., to Alliance Machine Co.

CRANE ORDERS PENDING

Twelve cranes for McClintic-Marshall Construction Co., Pittsburgh, understood to be for its middle-western unit; bids being taken.

Several cranes for Carnegie Steel Co., Homestead, Pa.; bids being taken.

Several cranes for Columbia Steel Co., Butler, Pa.; bids about to be asked.

Two traveling cranes for South Chicago works of Illinois Steel Co.; bids about to be asked.

One 20-ton locomotive crane for Carnegie Steel Co., Clairton, Pa., to be used in conjunction with 300 additional by-product coke ovens; order to be closed this week or next.

Tax Cut Acceptable to Industry

Increase in Levy on Corporation Incomes Offset by Repeal of Capital Stock Assessment—Simplification of Accounting Saves Millions—Small Taxpayer Favored—Some Details Explained

WASHINGTON, March 2.—Opinion here is that the 1926 tax reduction measure, which became a law last Thursday with the signature of President Coolidge, is as satisfactory as could be expected for business and industry. It relieves more people of direct taxes than any tax law ever placed on the statute books, and favors those of moderate means more than those of large incomes.

The tax on corporation incomes, which was 12½ per cent in the revenue law of 1924, becomes 13 per cent for the calendar year, 1925. Payments are to be made during the four quarters of the calendar year, 1926. For 1926 and thereafter the new rate is 13½ per cent.

The capital stock tax is repealed, which will bring relief to millions of investors to the extent of about $100,000,000. A large number of the stockholders are men and women of moderate means.

As to the increase in the corporation income tax, with the repeal of the capital stock tax, it is declared most of the corporations of the country, even those whose tax is increased, are greeting the change with marked approval. It is said the net result will be a decrease. For the smaller and weaker corporations, it is maintained, the increased tax, with the repeal of the capital stock tax, is a godsend. For the two taxes, corporations have been forced to file returns for two fiscal years. Each corporation, it has been argued, has been going through twice as much accounting as necessary. The income tax is based on a definite past fact, namely, how much money, net, did a company earn in the previous year. The capital stock tax has been based upon an estimate of the fair value of all the outstanding stock in July. The estimate has been open to question.

Senator Smoot pointed out that some increase may result in the case of corporations earning profits of more than 10 per cent but to all earnings less than that, no increase results.

Treasury officials expect a loss for the present fiscal year ending June 30, in corporation income sources, although it will depend somewhat on what the nature of incomes reported on March 15 will disclose. The returns may be such that the government will receive more income in the following fiscal year. The income tax receipts from corporations in the United States, including Alaska and the District of Columbia, totaled $916,232,697 in the fiscal year ended June 30, 1925. The loss to the government of the repeal of the capital stock tax will approximate $100,000,000, so that it would be necessary to get returns of corporation income of $10,000,000,000 to make up the loss of the capital stock tax revenues.

The new law sets up a somewhat complicated arrangement for payments of the corporation income taxes during 1926 on incomes for 1925. The tax on incomes in 1925 is to be a flat 13 per cent over the entire period. Of this tax, however, the corporation, in making its payments during the calendar year 1926, is to pay 24 per cent of the total tax in the first quarter, 24 per cent in the second quarter, 26 per cent in the third quarter and 26 per cent in the last quarter. The rate on corporation incomes paid during the calendar year 1926 up to July 1 is to be 6¼ per cent, and between July and December, 6¾ per cent. Thereafter the rate will be 13½ per cent.

Suspend Rate Cuts

Carriers Go Back to Former Pig Iron Tariffs, Pending Inquiry

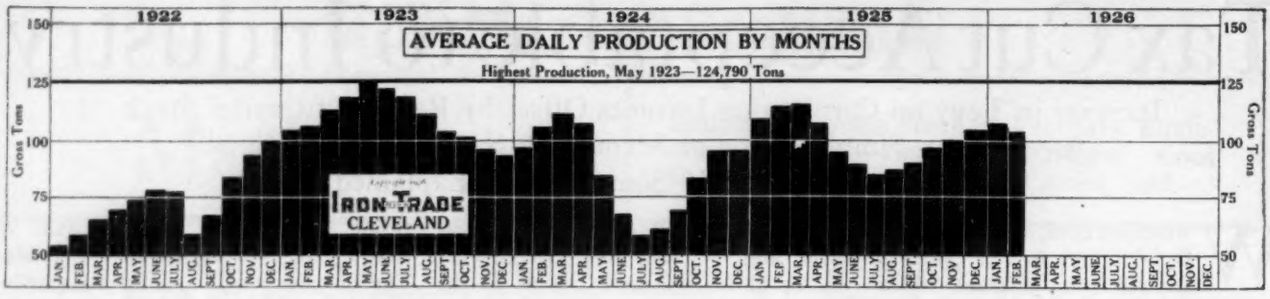
Chicago, March 2.—Effective May 1 carriers in the Central Freight association territory will restore rates on pig iron that were in effect before reductions were made in the past 60 days. The carriers' representatives will meet shortly to check over the old rates, to eliminate inequalities and alleged discriminations. The revised rates will be submitted at a public hearing, and the carriers hope the new schedule will be filed to take effect June 1.

The rates principally affected are those between points in northern and southern Ohio, Indiana and lower Michigan. Northern Ohio pig iron producers, especially those located at Toledo, Cleveland and Lorain, succeeded in obtaining what they termed "an equalization" of freight rates to interior Ohio points effective Jan. 7, Jan. 10 and Feb. 10, on various roads. The purpose was to enable the northern Ohio furnaces to compete in central and southern Ohio, and the reductions, which equalized the rates from southern Ohio furnaces to like points, amounted from 12 to 38 cents. Following this the reductions were extended into Indiana, West Virginia, and Michigan. Southern Ohio railroads then cut their rates to offset the other reductions with the result that the northern lines lost the benefit of their action, and only the shippers gained. This led to a decision last Friday to restore the original rates, pending a comprehensive revision.

Revised rates on manufactured iron and steel articles in the Illinois Freight association territory will be published as a result of the Jones & Laughlin Steel Corp.'s mileage case and a conference of shippers and railroads. The new rates will be effective April 15. Illustrating the changes, the new carload rate on manufactured iron and steel products Chicago to St. Louis will be 22 cents a ton compared with the present rates of 17½ cents and 21½ cents.

Made Vice President

S. R. Willock has been elected vice president of the Wellman-Seaver-Morgan Co., Cleveland, in charge of engineering and sales, assuming his duties March 1. Mr. Willock formerly was assistant sales manager of the Mackintosh-Hemphill Co., Pittsburgh. Graduating in 1905 as a mechanical engineer of Western University of Pennsylvania, now the University of Pittsburgh, he was successively with the steam turbine department of Westinghouse Machine Co., Pittsburgh, the engineering department of Heyl & Patterson Inc., Pittsburgh, sales engineer for the Mesta Machine Co., Pittsburgh, and sales manager of Treadwell Engineering Co., Easton, Pa. June 1, 1915, he became assistant general sales manager for William Todd Co., Youngstown, O., and later general sales manager. During the war he was assistant supply manager with the Emergency Fleet Corp., resigning to become sales manager of the Woodard Machine Co., Wooster, O., manufacturer of rolling mill machinery.



February Iron Production Is Low

AS A result of the blowing out of nine blast furnaces in January and still further reduction or interruption to operations in February, production of coke pig iron in the month just passed fell back to a rate slightly below that of last December. Although furnaces in blast on Feb. 28 were two less than on Jan. 31, at least three furnaces have resumed operations so far this month and numerous others are preparing to relight. Erratic coke prices in January and February due to the anthracite coal strike were responsible for the banking of many furnaces. With the strike settled, operations are returning to normal. On the last day of February, 223, of 58.5 per cent of the country's blast furnaces were in production, this being the same as on Jan. 31.

Active Blast Furnaces

	In blast	Total	Per Cent
February	223	382	58.5
January	225	385	58.5
December	234	385	60.7
November	220	385	57.2
October	209	386	54.1
September	200	387	51.6

Pig iron made in February totaled 2,921,449 gross tons, which compared with the 3,319,789 tons of January, was a loss of 398,340 tons. This was the lowest February output since 1922 when 2,071,772 tons were made. On a daily basis, the February production represented 104,337 tons per day, a loss of 2752 tons or 2.57 per cent, from the 107,089-ton rate of the preceding month. Daily output also was the lowest for February since 1922 when 58,220 tons was averaged. In February pig iron was made at the rate of 38,100,000 tons per year, against an annual rate of 39,200,000 tons for January and represented 83.8 per cent of the record production of 124,790 tons per day in May, 1923.

Furnaces operating on Feb. 28 totaled 223, as compared with 225 on the last day of January. During the month 2 merchant tacks were blown in and 4 blown out or banked. Of the nonmerchant class, 3 were blown in and 3 blown out. Of the total number of furnaces operating on the last day of February, 55 were merchant and 168 were nonmerchant. On Feb. 28, the Steel corporation was operating 91 furnaces, as compared with 90 on Jan. 31 and 93 on Dec. 31.

Furnaces blown in during February were: In Pennsylvania: One New Castle, Carnegie Steel Co.; Josephine No. 2, McKinney Steel Co. In Virginia: Pulaski Iron Co. In Illinois; Two South Works, Illinois Steel Co.

Stacks blown out during the month were: In Ohio: River No. 2, McKinney Steel Co. In Pennsylvania: Haselton No. 2, Republic Iron & Steel Co.; Eliza No. 4, Jones & Laughlin Steel Corp.; Sheridan No. 2, Lavino Furnace Co. In Kentucky: Ashland No. 2. American Rolling Mill Co. In Illinois: Federal B, By-Product Coke Corp. In Michigan: Detroit B, M. A. Hanna Co.

The Calumet Foundry & Machine Co., East Chicago, Ind., has increased its capital stock from $100,000 to $300,000.

MONTHLY PRODUCTION

	1926	1925	1924
January	3,319,789	3,372,207	3,015,489
February	2,921,449	3,214,067	3,073,619
March		3,571,422	3,465,389
April		3,211,235	3,226,107
May		2,933,907	2,619,986
June		2,679,045	2,022,836
Total 1st half	6,241,238	18,981,883	17,423,417
July		2,665,262	1,783,457
August		2,707,171	1,882,986
August		2,707,171	1,882,986
September		2,725,885	2,053,617
October		3,017,889	2,461,727
November		3,023,257	2,514,979
December		3,249,057	2,956,389
Total 2nd half		17,388,521	13,653,155
Grand Total	6,241,238	36,370,404	31,076,572

AVERAGE DAILY PRODUCTION

	1926	1925	1924	1923	1922
Jan.	107,089	108,781	97,273	104,136	53,090
Feb.	104,337	114,788	105,987	106,925	58,220
Mar.		115,207	111,787	113,664	65,674
Apr.		107,041	107,537	118,210	69,005
May		94,642	84,515	124,790	74,495
June		89,301	67,427	122,262	78,748
July		85,976	57,531	118,860	77,517
Aug.		87,328	60,741	111,254	58,408
Sept.		90,862	68,454	103,917	67,466
Oct.		97,351	79,410	101,375	84,827
Nov.		100,775	83,832	96,373	94,870
Dec.		104,808	95,367	93,952	99,468
Ave.	105,783	99,645	84,908	109,659	73,563

DIVISIONS OF PRODUCTION

1925	Merchant	Non-merchant	Spiegel	Ferro-manganese	Other ferro
Jan.	659,256	2,712,951	5,418	23,564	956
Feb.	661,415	2,552,652	4,910	19,796	848
Mar.	736,284	2,835,138	5,449	24,422	877
April	689,162	2,522,073	5,341	21,448	799
May	605,347	2,328,560	5,294	22,717	298
June	563,782	2,115,263	4,972	19,834	.....
July	609,741	2,055,521	5,074	16,614	.....
Aug.	588,330	2,118,841	4,940	18,818	.....
Sept.	569,219	2,156,666	5,162	18,381	140
Oct.	606,092	2,411,797	5,071	21,472	1,544
Nov.	638,214	2,385,043	6,370	27,202	1,665
Dec.	664,681	2,584,376	7,746	25,881	1,883
Total	7,591,523	28,778,881	65,747	260,149	9,010
1926					
Jan.	724,946	2,594,843	7,746	32,924	1,607
Feb.	618,522	2,302,927	7,084	22,309	1,464

FEBRUARY PIG IRON

	No. of stacks	No. in blast last day of month Feb.	Jan.	Total tonnage made Merchant	Nonmerchant	—Totals— Feb.	Jan.
Ohio	71	45	47	128,219	533,244	661,463	765,279
Pennsylvania	135	81	81	130.777	884 907	1,015.684	1,176,555
Alabama	37	25	25	108.940	117,747	226,687	245,396
Virginia	17	1	0	4,223	.....	4,223	3,106
New York	26	17	17	74,125	127,528	201,653	232,364
New Jersey	4	0	0	.....	.....	.....	.....
Illinois	25	16	15	81,868	168,514	250,382	273,086
Colorado	5	3	3				
Indiana	17	16	16	39,400	371,001	410,401	435,745
Maryland	6	5	5				
Wisconsin	5	2	2				
Kentucky	7	1	2				
Tennessee	13	3	3	13,600	41,528	55,128	69,818
Utah	1	1	1				
West Virginia	4	2	2				
Michigan	4	3	4				
Minnesota	3	2	2	28,727	36,244	64,971	76,163
Missouri	1	0	0				
Texas	1	0	0				
Spiegel and ferro—all states				8,643	22,214	30,857	42,277
Total	382	223	225	618,522	2,302,927	2,921,449	3,319,789

Checks Attack on Big Business

Administration Believed To Have Quelled Congressional Storm Against Legitimate Enterprise By Prompt Action in Food Merger—Favorable Attitude Toward Beneficial Combinations Has Not Changed

By Fred B. Pletcher

WASHINGTON, March 2.—By taking action against the proposed Ward Food Corp. merger, the Coolidge administration has forestalled a senate investigation of the merger, proposed by Senator La-Follette, and also has thrust aside a storm of simmering investigations of business organizations.

The implication has been reiterated recently that the administration holds moral support for giant business consolidations even though distasteful monopolies thus might be created. A part of this feeling, no doubt, has been due to the wrong interpretation placed upon the President's address some months ago before the New York chamber of commerce.

The activity of the department of justice in starting an investigation of the Ward baking combine and the action against the National Food Products Corp. does not mean, however, that the President and administration leaders are opposed to all such combinations.

On the other hand, Republicans and Democrats regard certain fields as provocative of too much competition, and actually have been supporting consolidations in railroad transportation and in hydroelectric power. The administration will continue to favor business combinations of a favorable sort, in which competition can be maintained, where beneficial, and in which lower production costs make cheaper commodities for the consumer. This attitude will not be changed.

Calls Off Investigations

It is believed the action of the department of justice has forestalled what was scheduled as an epidemic of muck-raking activities against business. The proceedings seem to have frustrated the negotiations for a merger of the Postum Cereal Co. and the California Packing Corp., which were called off abruptly.

The Washington reaction to the proposed Ward merger has not been favorable, even among the friends and supporters of legitimate corporations. The tendency has been to look upon such a gigantic merger as detrimental to large business and industrial organizations that have weathered storms in the past, throwing unjust suspicion upon corporations that are a real service to the country.

Such criticism, it has been held, inevitably would have been stirred up against almost any kind of business organization, and would have placed dangerous obstacles in the path of sound economic industrial progress.

It is pointed out further that the department of justice thus has set about the establishment of a new guide line for commerce and industry in the antitrust action against the Ward combine and that of the National Food Products Corp.

William J. Donovan, the assistant to the attorney general charged with antitrust law administration, is convinced that judicial interpretation of some phases of the Clayton act will be had which will prove helpful to business in an essential way.

It is to be noted that the National Food Products Corp. case is predicated largely upon section 7 of the Clayton act. The action purposely was restricted to this phase of the law so that a cleancut presentation can be made for a court construction of the section which never before has been considered in any ruling. Mr. Donovan is desirous of obtaining such examination of the section as will make known to business what it can and what it cannot do under the provisions. The proceedings were instituted under section 15 for obvious reasons, yet the real points upon which the proceeding will be stressed are based upon section 7.

The department of justice also has explained that in bringing the action against the two great corporations so early in their history, officials felt they could avoid having the investing public commit itself to the corporations' plans of financing.

The government's plea in the Ward case is broader than in the suit against the National Food corporation. Use was made of the Sherman and Clayton law provisions in the Ward proceedings, so that it appeared the department was predicating much of its program for a further construction of the law on the case against the National Food Products Corp.

It has been stated that the Republicans of the senate doubtless would show political cleverness in voting for an investigation of the Aluminum Co. of America by a senate committee. From a partisan point of view, it has been pointed out, they could ask for nothing better than to have Senator Walsh, of Montana, keep up his search for a Democratic issue by his usual tactics right up to election day.

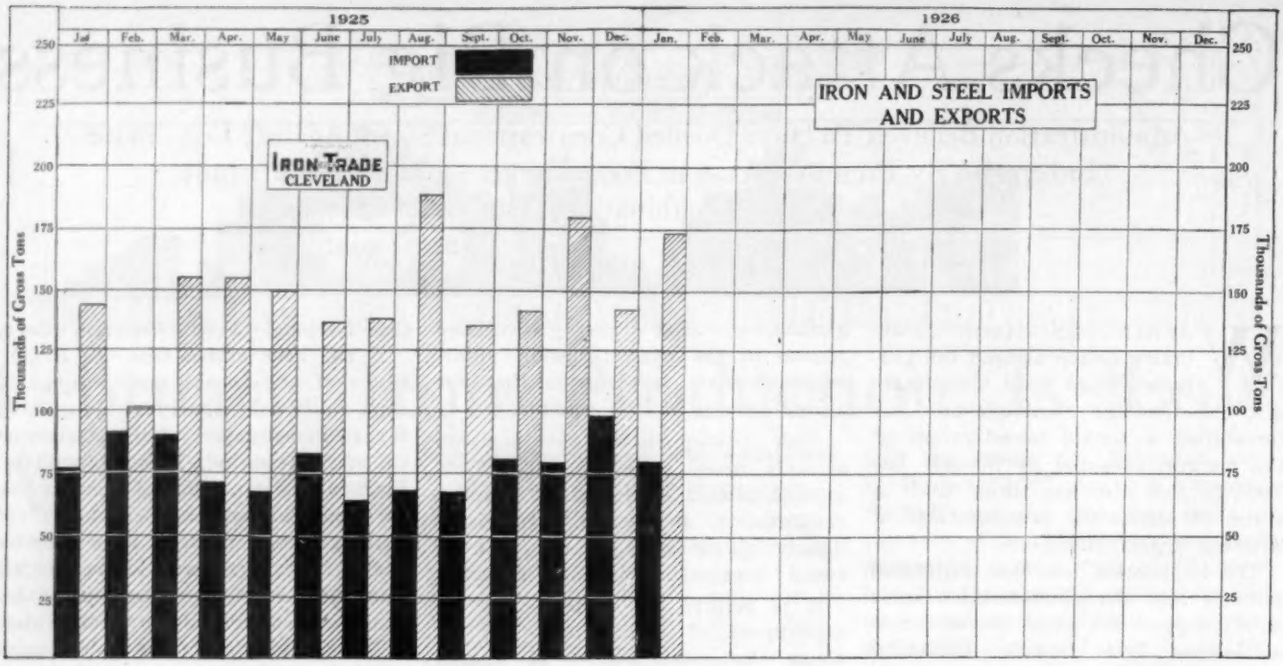
Nevertheless, from the public point of view, it would be the cause of intense regret that partisan malice thus should be permitted to attack a public servant of the type of Secretary Mellon, for the Aluminum company proceedings have amounted to nothing more than attempts to assail the secretary of the treasury.

Walsh Fights Aluminum Co.

The only outstanding charges against the Aluminum corporation come from the federal trade commission. As a quasijudicial body, the trade commission until a short time ago was a joke. Senator Walsh has become excited over the fact that neither Justice Stone, when attorney general, nor Attorney General Sargent took the charges of such a body seriously.

The investigation by the department of justice, which should precede legal proceedings only, is nearing completion. Obviously, it is regarded as ridiculous for the senate to begin another investigation without even waiting for the present examination to reach its conclusions. Nevertheless, that is what Senator Walsh demands in his report. Senator Herreld, of Oklahoma, has submitted a minority report in opposition that is more temperate and fair. It is likely, however, that a majority of the judiciary committee may be found for the Walsh report.

No doubt exists that a determined movement is on in the senate to check investigations of big business corporations. Indications are that this movement is going to be formidable. It also is noteworthy that the Coolidge administration may be credited, by its attitude toward the baking mergers, with the start of this movement.



Exports Gain—Imports Smaller

A SHARP upswing in the favorable foreign trade balance of the American iron and steel industry occurred in January, exports gaining 32,376 tons over December,

IMPORTS AND EXPORTS
Gross Tons

	—1926—		—1925—	
	Imports	Exports	Imports	Exports
Jan.	79,067	174,585	77,105	141,777
Feb.	.....	.....	92,353	102,299
March	.....	.....	92,115	155,348
April	.....	.....	71,233	155,375
May	.....	.....	67,789	150,612
June	.....	.....	82,853	136,847
July	.....	.....	64,642	139,861
Aug.	.....	.....	68,489	188,465
Sept.	.....	.....	68,445	136,791
Oct.	.....	.....	80,045	141,817
Nov.	.....	.....	79,771	171,134
Dec.	.....	.....	98,400	142,209
Total	79,067	174,585	943,240	1,762,571

Year	Imports	Exports
1925	943,240	1,762,571
1924	556,281	1,805,064
1923	734,734	2,009,141
1922	712,895	2,005,100
1921	135,825	2,150,276
1920	421,274	4,934,087
1919	322,264	4,397,295
1918	169,110	5,338,019
1917	330,301	6,465,053
1916	328,965	6,110,732
1915	282,396	3,532,564
1914	289,775	1,549,554
1913	317,260	2,745,635

and imports dropping 19,333 tons in January from the preceding month. Exports totaled 174,585 tons, the heaviest, with the exception of August 1925, since January, 1924. Imports amounted to 79,067 tons, compared with 98,400 tons in December, and 77,105 tons in January, 1925.

The import list for January includes additional classifications for which data has been compiled for the first time by the department of commerce. Steel manufacturers for-

IRON AND STEEL IMPORTS
Gross Tons

			Seven months ended Jan.,	
	1926	1925	1926	1925
Pig iron	48,423	53,330	259,682	136,377
Ferromanganese and alloys	2,631	7,560	36,681	34,168
Ferrosilicon	424	143	2,197	5,140
Iron and steel scrap	2,691	10,418	52,508	51,299
Iron slabs and blooms	.....	.....	779	*
Steel ingots, blooms, etc.	1,939	1,635	11,752	18,025
Steel bars	6,729	6,504	37,225	2,535
Iron bars	64	828	3,950	2,671
Wire rods	1,173	656	4,756	2,671
Hoops, bands and scrolls	921	659	5,737	*
Boiler and other plate	271	24	973	739
Sheets, plates and saw plates	709	455	2,276	1,929
Tin plate	2	55	258	186
Structural shapes..	5,093	3,798	40,012	29,094
Rails and splice bars	1,435	250	15,097	25,842
Cast iron pipe	2,005	7,170	36,966	22,643
Other pipe and tubes	2,251	4,079	22,276	**
Barbed wire	920	.....	4,753	*
Round iron and steel wire	287	243	2,423	1,452
Flat wire and strip steel	216	204	1,328	1,009
Steel telegraph and telephone wire....	.....	26	133	***
Wire rope and strand	52	93	735	5,035
Other wire	162	.....	569	
Wire cloth and screening	12	16	232	*
Nails, tacks and staples	22	236	2,305	263
Bolts, nuts and rivets	1	1	55	83
Castings and forgings	364	185	1,561	1,354
Horseshoes	.....	.....	.....	*
Total	79,067	98,548	546,819	342,582

*Not listed as such prior to Jan. 1, 1926.
**Formerly classified as tubular products, now segregated so as to show cast iron pipe and other pipe and tubes; latter includes welded pipe or jointed pipe, electrical conduits, ball bearing and other tubes. Cylindrical or tubular tanks and drums have been dropped, now being shown by value instead of quantity.
***Listed as wire rope and insulated wire prior to Jan. 1, 1926. Hoops, bands and scroll includes cotton ties.
Other wire now includes covered or insulated wire, corset and dress steel and galvanized fencing wire.

ORIGIN OF MANGANESE ORE IMPORTS
Gross Tons

	Jan., 1926	Dec., 1925
Germany	16	17
Soviet Russia in Europe	20,789	16,066
United Kingdom	77	.....
Brazil	8,454	19,175
Chile	.....	1,019
British India	2,532	631
British West Africa	5,630	.....
Total	37,498	36,908

ORIGIN OF FERROMANGANESE IMPORTS
Gross Tons

	Jan., 1926	Dec., 1925
France	24	37
Germany	79	.....
Russia	.....	4,787
United Kingdom	1,462	1,210
Canada	1,066	1,508
Chile	.....	18
Total	2,631	7,560

ORIGIN OF PIG IRON IMPORTS
Gross Tons

	Jan., 1926	Dec., 1925
Belgium	930	2,030
France	4,663	1,400
Germany	8,395	9,200
Lithuania	1,530	.....
Netherlands	7,173	6,075
Sweden	30	266
United Kingdom	15,833	20,148
Canada	540	662
British India	9,329	13,552
Total	48,423	53,333

ORIGIN OF IRON AND STEEL IMPORTS
Gross Tons

	Steel bars	Steel scrap	Cast iron pipe	Steel rails
Austria	21	.....	.....	.....
Belgium	3,850	.....	978	329
Czechoslovakia	505	.....	.....	.....
France	580	.....	1,027	.....
Germany	380	.....	.....	903
Netherlands	551	.....	.....	49
Other countries	.....	.....	.....	18
Sweden	632	116	.....	.....
Dominican Republic..	.....	.....	.....	59
United Kingdom	178	.....	.....	.....
British West Indies....	.....	103	.....	.....
Canada	32	2,708	.....	77
Mexico	.....	34	.....	.....
Total	6,729	2,961	2,005	1,435

IRON AND STEEL EXPORTS

Gross Tons

	January, 1926	December 1925	Seven months ended January 1926	January 1925
Pig iron, not including ferro-alloys	1,663	2,626	23,134	20,986
Ferromanganese and spiegeleisen	30	40	1,446	460
Scrap	3,397	3,705	42,873	23,306
Ingots, blooms, billets, sheet bars and skelp	3,208	10,488	59,403	30,797
Iron bars	194	263	2,023	2,021
Steel bars	11,070	9,859	67,242	49,684
Alloy steel bars	463	567	1,850	1,671
Wire rods	1,180	1,834	9,437	8,821
Plates	9,102	9,933	59,732	42,288
Galvanized sheets	16,408	12,410	87,967	68,686
Black steel sheets	13,638	11,357	71,559	76,461
Black iron sheets	1,709	1,854	10,282	7,525
Hoops, bands and strip steel	4,663	40,055	25,810	54,328
Tin plate, terne plate, etc.	21,143	13,001	104,747	75,667
Structural shapes, plain	10,049	9,640	71,121	65,180
Structural material, fabricated	9,278	6,954	50,333	40,799
Metal lath	285	303	2,191	1,610
Steel rails	9,198	4,820	85,286	109,730
Rail fastenings, switches, frogs, etc.	3,996	1,843	22,695	17,596
Boiler tubes and welded pipe	32,052	17,207	156,457	102,990
Malleable iron screwed pipe fittings	907	980	**	
Cast iron screwed pipe fittings	865	666	**	
Cast iron pressure pipe and fittings	1,114	1,256	64,417	24,374
Cast iron soil pipe and fittings	502	936	**	
Plain wire	2,391	2,770	18,833	15,230
Barbed wire and woven wire fencing	5,442	5,873	39,374	54,046
Wire cloth and screening	124	197	1,260	868
Wire rope	458	515	2,076	2,029
Insulated wire and cable	88	24	728	**
Other wire and manufac. of	710	817	5,098	6,371
Wire nails	932	944	6,613	6,339
Nails other than wire	691	852	5,276	4,856
Tacks	60	**	60	**
Horseshoes	48	85	418	508
Bolts, nuts, rivets and washers except track	1,004	1,479	9,538	10,758
Car wheels and axles	2,119	1,109	10,752	13,089
Iron castings	699	823	6,546	4,802
Steel castings	357	255	1,856	2,140
Forgings	148	109	1,156	978
Total	174,585	142,209	1,094,869	953,579

** Not listed separately.

ORIGIN OF IRON ORE IMPORTS

Gross Tons

	January 1926	1925	Seven months ended January 1926	1925
Spain	15,780	12,620	63,677	58,161
Sweden	....	14,832	105,744	241,791
Canada	517	140	4,972	3,222
Cuba	50,000	48,750	298,612	149,048
Chile	119,300	63,900	740,000	705,875
French Africa	15,600	26,795	78,675	126,489
Other countries	1,135	7,375	38,428	16,213
Total	202,332	174,412	1,330,108	1,300,799

merly collected under the heading of tubular products now are segregated to show cast iron pipe and other pipe and tubes, welded or jointed pipe, electrical conduits, ball bearing and other tubes. The old wire rope and insulated wire classification has been divided to show steel telegraph and telephone wire and wire rope and strand. Other wire now includes covered or insulated wire, corset and dress steel and galvanized fencing wire.

Pig iron imports continue to dominate the foreign trade, receipts in January totaling 48,423 tons, compared with 53,330 tons in December and 34,722 tons in November. A sharp drop in scrap imports from 10,418 to 2691 tons and in ferromanganese and alloys from 7560 to 2631 tons featured declines on the import list. Shipments of pig iron to the United States from France and the Netherlands increased in January over February, other countries showing decline.

Although generally showing improvement, the export list was featured by large gains in galvanized sheets, tin and terne plate, fabricated structural material, steel rails, and boiler tubes and welded pipe.

Some changes have been made in presentation of export figures on machinery, the new divisions identifying more closely the different types of machine tools. Exports fail to show the improvement expected.

DESTINATION OF IRON AND STEEL EXPORTS FOR JANUARY, 1926

Gross Tons

Countries	Rails	Galvanized Sheets	Plates not fabricated	Tin, terne plate	Steel sheets black	Barbed wire	Steel bars	Steel scrap
Argentina	....	563	....	1,054	101	162	....	....
Australia	....	44	104	....	....	93	....	150
Brazil	43	462	....	240	16	954	....	60
British India	....	929	....	4,034	....	....	....	....
British South Africa	59	93	....	98	....	491	....	....
Canada	848	2,464	8,436	3,258	3,482	124	4,399	7,683
Chile	1,216	433	....	344	244	61	....	354
China	....	414	....	1,825	43	....	234	94
Columbia	1,142	981	....	326	....	563	....	248
Cuba	767	1,056	58	185	37	309	28	217
Central America	....	383	7	....	....	405	....	....
Dominican Republic	....	....	....	....	....	....	....	50
Dutch West Indies	....	....	....	53	....	....	....	....
Guatemala	2,749	....	....	....	....	....	....	....
Europe	....	....	....	....	1,325	....	....	....
Hong Kong	....	....	....	....	31	....	....	....
Italy	....	....	....	827	....	....	....	....
Japan, including Chosen	142	1,256	27	7,272	8,071	....	1,719	422
Mexico	58	783	61	454	52	511	....	169
Norway	....	198	....	....	....	....	....	....
Other Europe	....	857	....	....	....	....	....	....
Other countries	1,526	1,946	27	232	131	920	....	531
Other South America	648	517	179	....	105	72	....	....
Peru	....	....	....	195	....	....	....	....
Philippine Islands	....	3,029	50	164	....	607	....	298
Uruguay	....	....	....	316	....	....	....	....
United Kingdom	....	....	....	220	....	16	17	794
Venezuela	....	....	....	....	1	154	....	....
Total	9,198	16,408	8,949	21,143	13,638	5,442	6,397	11,070

EXPORTS OF MACHINERY

In Number Unless Otherwise Designated

	January 1926	1925	Seven months ended January 1926	1925
Lathes	.....	87	771*	581
Boring and drilling machine tools	.....	146	984*	1,465
Planers, shapers and slotters	.....	38	126*	162
Bending and power presses	.....	20	252*	240
Gear cutters	.....	22	138*	220
Milling machines	.....	92	528*	340
Punching and shearing machines	.....	8	105*	95
Power hammers	.....	21	111*	123
Other metalworking machinery and parts of, (lb.)	.....	899,761	.....	.....
Engine lathes	58	.....	58†	.....
Turret lathes	3	.....	3†	.....
Other lathes	83	.....	83†	.....
Vertical boring mills and chucking machines	9	.....	9†	.....
Thread-cutting and automatic screw machines	47	78	524	495
Knee and column type milling machines	5	.....	5†	.....
Other milling machines	45	.....	45†	.....
Disc-type gear cutting machines	1	.....	1†	.....
Rolling mill machinery, (lb.)	468,244	.....	468,244†	.....
Other gear cutting machines	93	.....	93†	.....
Vertical drilling machines	20	.....	20†	.....
Radial drilling machines	2	.....	2†	.....
Sensitive drilling machines	58	.....	58†	.....
Other drilling machines	75	.....	75†	.....
Other metalworking machinery (total)	$449,307	$270,291	$2,649,689	$1,874,550
Air compressors				
Capacity up to 25 cu. feet	424	270	2,849	***270
Capacity over 25 cu. feet	277	156	1,710	***156
Cranes, with swinging booms (No.)	3	6	54	30
Other cranes	13	3	133	113
Hoists and derricks, except mining	479	709	3,476	3,287
Ball and roller bearings and parts of, (lbs.)	172,422	68,272	1,118,057	799,656
Sprocket and power transmission, (lbs.)	451,439	97,667	2,054,205	2,290,551
Other chains, (lbs.)	805,136	858,275	7,092,519	5,413,422

*July 1 to Dec. 31, 1925.
†Beginning Jan. 1, 1926.
***Beginning Jan. 1, 1925.

News of Societies

THE annual meeting of the American Welding society will be held April 21-23 at the Engineering Societies building, 29 West Thirty-ninth street, New York. A tentative program has been issued calling for meetings on gas and electric arc welding, April 21; design of welded joints in the automobile industry, April 22; and design in piping installations, tanks and containers and structural steel work, April 22. On the third day the American Bureau of Welding will convene, followed by an inspection trip to the Metal & Thermit Corp. plant.

* * *

Will Discuss Crane Safety

"The Safe Operation of Electric Overhead Traveling Cranes" will be the subject of the March 10 meeting of the safety division of the Association of Iron and Steel Electrical Engineers at the William Penn hotel, Pittsburgh. Papers and discussion will deal with employment and training of crane operators, safety methods and devices, and educational rules for safety.

* * *

May Meet In Stockholm

The British Iron and Steel institute will hold its annual meeting on Thursday and Friday, May 6-7, at the house of the Institution of Civil Engineers, London, S. W. 1. It has also been announced that the autumn meeting of the institute may be held in Stockholm, Sweden. In March the council of the institute will consider applications for grants from the Carnegie fund for research work on some subject of practical importance relating to the metallurgy of iron and steel or allied subjects.

* * *

To Meet in New England

Heat treatment of automobile parts will be discussed at the March meeting of the American Society for Steel Treating, Boston chapter, to be held at the Massachusetts Institute of Technology March 5. J. M. Watson of the Hupp Motor Car Co. will present a paper illustrated with motion pictures.

F. R. Palmer, Carpenter Steel Co., will speak on tool steel at the April meeting of the chapter, to be held at the General Electric Co., Lynn, Mass., April 21. At this meeting a special demonstration of the dilatometer will be given.

* * *

Tentative Program Announced

A tentative technical program for the second International Foundrymen's congress, to be held at Detroit Sept. 27-Oct. 1, has been announced by the American Foundrymen's association. Nonferrous sessions will be conducted jointly with the Institute of Metals division of the American Institute of Mining and Metallurgical Engineers. Sessions have been tentatively scheduled to cover foundry costs and refractories, sand control, steel metallurgy, steel foundry shop problems, materials handling, malleable castings, and foundry methods and problems. Two sessions are to be held on metallurgical and shop problems of the cast iron industry.

* * *

To Hold Industrial Conference

An industrial development conference, sponsored by the southern division of the American Mining congress, will be held at the Peabody hotel, Memphis, Tenn., March 15-17, for the purpose of interesting capital in the development of resources of the South. William H. Lindsey, Napier Iron Works, Nashville, Tenn., chairman of the southern division, and Dr. Henry Mace Payne, consulting engineer to the congress, are preparing the program, which will include papers on mineral development and tariffs, labor relations, industrial power, public versus private industrial operations, legislation, transportation and freight rates, electric smelting and the financing of industry.

Steel from Nova Scotia to Vancouver, by Boat

The first of the British Empire Steel Corp.'s fleet to make a voyage with a cargo of steel products to British Columbia by way of the Panama canal has arrived at its destination, the corporation's offices at Montreal announces. The WABANA sailed from Sydney, Nova Scotia, on New Year's day. John R. McIsaac, the company's general manager of traffic, has just returned from Vancouver where he went to meet the steamer. The ultimate destinations of the steel are western Canadian cities, and the Orient. Before the war several chartered ships carried cargoes of steel rails from the company's plant to the Pacific Coast, by way of Cope Horn.

Mills Near Completion

Bethlehem, Pa., March 2.—The Bethlehem Steel Co., expects to inaugurate operations at its new 14-inch structural mill at the Lackawanna plant at Buffalo in the latter part of March. The schedule also calls for inauguration of operations at the new wire and nail plant at Sparrows Point about the same time. The latter plant is rated as having capacity for 12,000 tons of rods and 10,000 tons of finished wire and wire products per month. The company expects to place three new open-hearth furnaces and the new 14-inch blooming mill in operation at Sparrows Point early in April. Orders have been given to light an additional blast furnace at Bethlehem on basic iron next week. This will make a total of six blast furnaces in operation at Bethlehem.

Convention Calendar

March 10-11—Concrete Reinforcing Steel institute. Second annual meeting at Hotel Traymore, Atlantic City, N. J. M. A. Beeman, 160 North LaSalle street, Chicago, secretary.

April 6-8—American Oil Burner association. Annual convention and exposition, Book-Cadillac hotel, Detroit. Office of secretary, 350 Madison avenue, New York.

April 21-23—American Welding society. Annual meeting at Engineering Societies building, New York. Miss M. M. Kelly, 29 West Thirty-ninth street, New York, secretary.

April 22-24—American Electrochemical society. Meeting, Chicago Beach hotel, Chicago. Colin G. Fink, Columbia university, New York, secretary.

April 28-30—National Foreign Trade council. Thirteenth annual convention, Francis Marion hotel, Charleston, S. C. O. K. Davis, India house, 1 Hanover square, New York, secretary.

May 3-6—American Society of Mechanical Engineers. New England regional meeting, Providence, R. I. Calvin W. Rice, 29 West Thirty-ninth street, New York, secretary.

May 10-15—Association of Chemical Equipment Manufacturers, Inc. Second chemical equipment and process engineering exposition, Public hall, Cleveland. Roberts Everett, 1328 Broadway, New York, secretary.

May 13-15—American Gear Manufacturers' association. Annual meeting at Book-Cadillac hotel, Detroit. T. W. Owen, 2443 Prospect avenue, Cleveland, secretary.

May 17-21—National Association of Sheet and Tin Plate Manufacturers. Fourth annual meeting at Hotel Greenbrier, White Sulphur Springs, W. Va. Walter W. Lower, 421 Oliver building, Pittsburgh, secretary.

May 17-22—American Supply and Machinery Manufacturers' association. Annual convention at Hotel Statler, St. Louis. F. D. Mitchell, 1819 Broadway, New York, secretary.

May 20-21—American Society for Steel Treating. Spring sectional meeting, Hotel Bond, Hartford, Conn. W. H. Eisenman, 4600 Prospect avenue, Cleveland, secretary.

June 7-10—Association of Iron and Steel Electrical Engineers. Twenty-second annual convention and exposition at Hotel Sherman, Chicago. John F. Kelly, 513 Empire building, Pittsburgh, secretary.

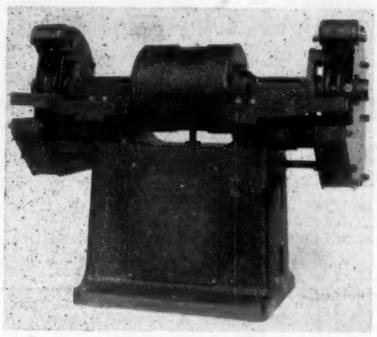
June 9-12—National Association of Purchasing Agents. Eleventh annual convention and exposition, Ambassador hotel and Auditorium, Los Angeles. W. L. Chandler, Woolworth building, New York, secretary.

June 21-25—American Institute of Electrical Engineers. Annual convention at White Sulphur Springs, W. Va. F. L. Hutchinson, 29 West Thirty-ninth street, New York, secretary.

Grinding Wheel Speed Constant

No. 45

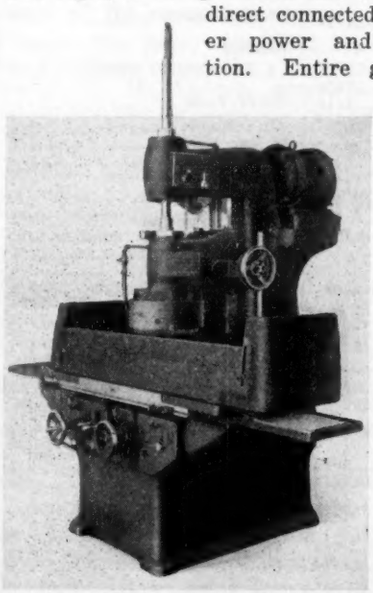
Ransom Mfg. Co., Oshkosh, Wis., is marketing a direct-current dry grinding machine with 18-inch wheels and larger. The machine is equipped with a patent speed controller as regular equipment providing a 75 per cent speed variation obtained by means of external field control and a constant periphery speed maintained until the wheel is practically worn out. Grinding wheel speed is regulated by a gage or roller directly under the wheel. As the latter wears down these rollers are set so as to touch or nearly touch the wheel. Adjustment of the rollers by means of an arm regulates the field rheostat in the machine base, which in turn controls the motor speed for that particular size wheel. The roller travels directly toward the center of arbor and does not depend upon adjusting of guards. Starter consists of an enclosed knife switch and fuses and enclosed rheostat. Rest brackets are quickly removable, and eliminating the end flange at the bottom of the base gives further freedom. One extra large ball bearing is mounted in each housing thus allowing the self-aligning features of the bearings to take effect. Weight is 1900-3100 pounds.



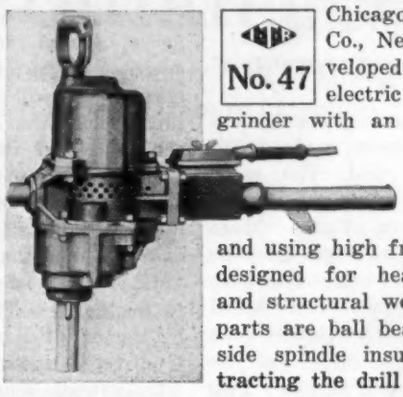
Surface Grinder Is Redesigned

No. 46

Pratt & Whitney Co., New York, has just put out a new design vertical surface grinder, with grinding wheel spindle motor driven direct through a right angle drive using circular bevel gears. The 14-inch machine requires a 25-horsepower motor at 1750 revolutions per minute; the 22-inch, a 40-horsepower at 1150 revolutions. The entire column and the wheel head and spindle mounting are heavy and rigid, insuring smooth and accurate action. The direct connected motor gives greater power and increases production. Entire grinding spindle is mounted on ball bearings which are fully protected. The wheel is easily removable, mounted on a face plate bolted to the spindle and covered by a sheet metal guard. Wheel heads are counterweighted for easy adjustment and to prevent sagging. Stiff springs float the spindle.



Tools Employ Higher Frequencies



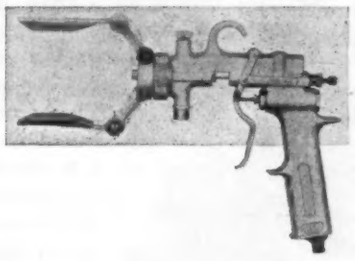
No. 47

Chicago Pneumatic Tool Co., New York, has developed a new type electric reamer and grinder with an induction motor and using high frequency current, designed for heavy car, bridge and structural work. All rotating parts are ball bearinged. An outside spindle insures ease in extracting the drill or reamer.

Paint Spray Gun Has New Feature

No. 48

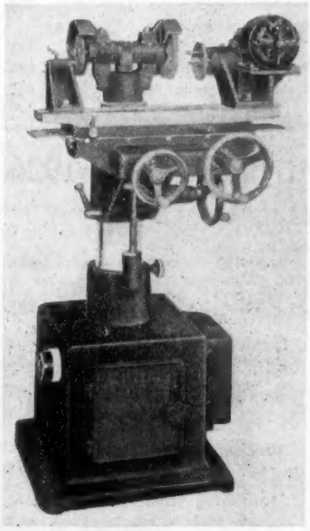
Spray Painting & Finishing Equipment Co., Boston, has developed a paint spray gun with a claw attachment which enables the operator to protect adjoining surfaces without masking. Through a hand adjustment of air pressure, paints of different specific gravity may be applied with the same apparatus. It is possible to secure round or fish-tail sprays.



Cutter Grinder Uses Motor Drive

No. 49

Gallmeyer & Livingston Co., Grand Rapids, Mich., have redesigned their universal cutter and tool grinders to provide for self-contained motor drive, eliminating overhead drive. The machine has a ¾-horsepower motor mounted in the base and belted through the column to the grinding wheel spindle. The motor is made easily accessible by means of a swing door in the base. A 1/12-horsepower lamp socket motor is built into the headstock to provide for handling cylindrical and internal grinding. The work spindle is driven by means of a worm, providing the necessary slow speed and eliminating the necessary overhead drum. Longitudinal, transverse and vertical movements are controlled by convenient handwheels. Machine swings work 9½ inches in diameter up to 20 inches wide. Longitudinal movement of 15 inches, transverse of 7 inches and vertical of 6¾ inches is provided. The net weight of the machine is approximately 685 pounds.



Safety Is a Factor in Selling Tools

(*Concluded from Page 580*)

a 40-horsepower motor running at 1150 revolutions.

To mount the motor properly, the entire column has been made much heavier and more rigid. The same is true of the wheel head and spindle mounting. The result of the direct connected motor is a large increase of power at the wheel and consequent increase in production. The wheel heads are over counterweighted for easy and rapid adjustment and to prevent the wheel from sagging. Two table speeds are provided, the operating clutch being controlled by a handle on the front of the gear box.

A feature of the grinding machine manufactured by the Ransom Mfg. Co., and described as No. 45, is that by a special device the peripheral speed of the wheel remains constant. As will be seen from the illustration, the motor is mounted at the center of the spindle and is of the direct-current type capable of a speed increase to 75 per cent above normal. Thus it is possible to maintain a constant peripheral speed until the wheel is practically worn to the flanges. The speed is regulated by means of a gage or roller which is directly under each wheel. As the wheels wear down, these rollers are set so that they touch or nearly touch the wheels. This adjusting of the rollers automatically moves the arm of the field rheostat in the base of the machine to give the proper running speed of the motor.

Gallmeyer & Livingston Co. has redesigned its universal cutter and tool grinder to provide for a self-contained motor drive, thus eliminating overhead drive. As shown in the illustration in No. 49, the motor is mounted in the base and belted through the column to the grinding wheel spindle. A swing door on the base makes the ¾-horsepower motor accessible. A 1/12-horsepower lamp socket motor is built into the headstock to provide for handling cylindrical and internal grinding. The work spindle is driven by a worm, providing the necessary slow speed.

Twist Drill Grinder Is Portable

No. 50

Keystone Grinder & Mfg. Co., Pittsburgh, is marketing a twist drill grinder employing a wedge shaped holder which clamps tools and grinding attachments rigidly, eliminating hand application. The face of the grinding wheel is used instead of the side, and air circulation is substituted for water. Twist drills from ¼-inch to 1½ inches can be ground. The wheel is 1½ x 7 inches, operated by a ¼-horsepower motor. Protection is afforded by a heavy hood.

Index of New Equipment Described in This Issue

No.	Equipment	Manufacturer	Page
41.	Wire cutter	Hallden Machine Co.	579
42.	Boring mill	Consolidated Machine Tool Corp.	579
43.	Pumping outfit	Novo Engine Co.	580
44.	Die casting machine	Simplex Casting Machine Co.	580
45.	Horizontal grinder	Ransom Mfg. Co.	611
46.	Surface grinder	Pratt & Whitney Co.	611
47.	Portable tools	Chicago Pneumatic Tool Co.	611
48.	Paint gun	Spray Painting & Finishing Equipment Co.	611
49.	Cutter grinder	Gallmeyer & Livingston Co.	611
50.	Drill grinder	Keystone Grinder & Mfg. Co.	612

Machine Tools Introduced in 1926 (By Manufacturers)

	Issue
American Hoist & Derrick Co.	1/14
Baker R & L Co.	1/14
Boston Gear Works	2/4
Bucyrus Co.	1/14
Chicago Pipethread Machinery Co.	1/14
Chicago Pneumatic Tool Co.	3/4
Connor, W. B., Co.	1/14
Consolidated Machine Tool Corp.	1/14, 2/4, 3/4
Cutler-Hammer Mfg. Co.	1/14
De Laval Steam Turbine Co.	1/14, 2/4
Engelhard, Charles, Inc.	1/14
Ernst Krause & Co.	1/14
Farrel Foundry & Machine Co.	1/14
Gallmeyer & Livingston Co.	1/14, 3/4
General Electric Co.	1/14
Geometric Tool Co.	2/4
Hallden Machine Co.	3/4
Hammond Mfg. Co.	1/14
Harnischfeger Corp.	1/14
Kent Machine Co.	1/14
Keystone Grinder & Mfg. Co.	3/4
Landis Machine Co.	1/14
Metal Saw & Machine Co.	1/14
Milburn, Alexander, Co.	1/14
Morton Mfg. Co.	1/14
National Acme Co.	2/4
Norton Co.	1/14
Novo Engine Co.	1/14, 3/4
Nugent, Wm. W., Co.	2/4
Oilgear Co.	1/14
Pratt & Whitney Co.	3/4
Ransom Mfg. Co.	3/4
Simplex Casting Machine Co.	3/4
Spray Painting & Finishing Equipment Co.	3/4
Squier-Rix Co.	1/14
Stiening Spacing Machine Co.	2/4
United Engineering & Foundry Co.	2/4
Westinghouse Electric & Mfg. Co.	2/4, 2/4
Williams Gauge Co.	2/4
Winterhoff Tool & Machine Co.	2/4, 2/4
Woodward & Powell Planer Co.	2/4
Yale & Towne Mfg. Co.	2/4
Zeh & Hahnemann Co.	1/14

Machine Tools Introduced in 1926 (By Products)

No.	Issue
Boring Mills	
42. Boring mill	3/4
27. Tire mill	2/4
Broaching Machines	
18. Hydraulic broacher	1/14
Drilling Machines	
36. Bench drill	2/4
5. Six-spindle driller	1/14
Grinding Machines	
49. Cutter grinder	3/4
11. Drill grinder	1/14
50. Drill grinder	3/4
45. Horizontal grinder	3/4
2. Roll grinder	1/14
46. Surface grinder	3/4
Material Handling Equipment	
30. Chain hoists	2/4
12. Excavator, tractor	1/14
6. Gasoline hoist	1/14
8. Hoist and loader	1/14
9. Lift truck	1/14
10. Revolving shovel	1/14
Pipe Machines	
4. Threader and cutter	1/14
23. Threading machine	1/14
Planers	
29. Planer	2/4
19. Roll wabble	1/14
Punches, Presses, etc.	
28. Bloom shear	2/4
3. Horizontal press	1/14
Saws	
7. Metal band	1/14
Slotters	
1. Locomotive frame	1/14
Small Tools	
31. Collapsing tap	2/4
34. Die head	2/4
47. Portable tools	3/4
Miscellaneous	
13. Air compresor	1/14
16. Boiler water indicator	1/14
14. Control switch	1/14
40. Control switch	2/4
44. Die casting machine	3/4
22. Gasoline engine	1/14
25. Gear reducer	1/14
37. Gear reducer	2/4
38. Gear reducer	2/4
21. Machine vise	1/14
20. Mill gear drive	1/14
15. Nut setter	1/14
24. Oil burner	1/14
32. Oil filter	2/4
48. Paint gun	3/4
43. Pumping outfit	3/4
17. Pyrometer switch	1/14
39. Saw and sander	2/4
26. Spacing table	2/4
33. Steam trap	2/4
35. Synchronous motor	2/4
41. Wire cutter	3/4

Move Against Foundry Waste

Makers and Users of Castings in National Conference in Washington Organize Committee To Study Problems—Debate Question of Specifying Products According to Weights

WASHINGTON, March 2.—Developments from the conference here on Feb. 25 of producers of foundry castings, foundry trade associations, users and distributers of foundry products is expected to open the way for broad steps in the elimination of avoidable waste in the foundry industry.

The conference was called at the request of foundry trade associations, producers and users of castings to consider the advisability of adopting the practice of showing weights of castings on blueprints sent to foundries for estimate. The meeting was held with the national committee on utilization of metals, of which W. Chattin Wetherill, director of metals utilization of the department of commerce, is the head.

A number of conflicting views and several complications were presented, and the conference decided to authorize a committee to be named by the department of commerce, representing malleable, gray iron, steel and brass foundries and their associations, and to include the producers, distributors and users of foundry products, to consider the elimination of waste. Emphasis is placed on "wasteful procedure of submitting blueprints to foundries without first indicating the weights of the castings." The committee is to report at the American Foundrymen's association meeting in Detroit the latter part of September. Members of the committee are:

William H. Barr, president, National Founders association, Chicago, chairman; R. H. Aishton, president, American Railway association; Charles Clifton, Pierce- Arrow Automobile Co., Buffalo, and president of the Automobile Association of America; Frank Nixon, secretary, American Railway association, Philadelphia; A. G. Hopcraft, president, National Association of Purchasing Agents, New York; Thomas E. Durban, Erie City Iron Works, Erie, Pa.; John J. McBride, engineer of construction, American Car & Foundry Co., New York; and members to be selected by the American Foundrymen's association, the Steel Founders Society of America, and the American Malleable Castings association.

Fred G. Wolff, representing the American Car & Foundry Co., and others representing car builders and repairers registered some opposition to the proposals to show weights of castings on blueprints.

W. J. Corbett, Steel Founders Society of America, Pittsburgh, read a paper in which he stated that the logical person to estimate weights of castings is the draftsman making the tracing.

A. J. B. Harris, Ajax Metal Co., representing the American Foundrymen's association, told of a weight guessing contest by the association of 997 estimates, of which only three approximated the actual weight of 109 pounds, the variations ranging from 24½ to 765 pounds.

Robert E. Belt, American Malleable Castings association, Cleveland, read a paper in which he stated that savings resulting from the proposed adoption translated into manpower and thence into dollars might be estimated at $5,000,000, yearly, on the theory that 12 hours are spent daily in the foundry by engineers or superintendents in estimating weights.

Secretary of Commerce Hoover, in addressing the conferees, emphasized the fact that co-operation of business in eliminating waste is doing away with the tendency toward legislating for business by congress, and that business has demonstrated the fact that it can cure all of its own ills.

W. N. Crafts, Reading Steel Casting Co., Reading, Pa., who moved the adoption of the resolution for the committee to study the questions involved, declared that as dishonest purchasing agents and foundry managers exist, an attempt should be made to agree to honest estimates in weights in case of adoption of procedure to show weights of castings.

Good Prospects

Are Seen by President Campbell for Present Year

The outlook for the iron and steel industry in the months ahead is encouraging according to President James A. Campbell of the Youngstown Sheet Tube Co., in his annual report to stockholders. During 1925 the company's shipments improved due to better conditions but selling prices were generally lower. This was partially offset by lower production costs resulting from improved equipment.

Considering the amount of invested capital, President Campbell pointed out, the earnings for the year were small. The net earnings available for dividends amounted to $13,227,721 compared with $7,598,075 in 1924.

Total shipments during 1925, the report shows amounted to 1,529,817 tons compared with 1,253,004 tons in 1924, and 1,747,189 tons in 1923. Gross sales in 1925 totaled $136,513,585. In 1924 the gross was $121,456,369 against $165,649,369 in 1923.

During 1925 the property account of the company was increased by $10,616,326 due to the building of new mills and the replacement of old units with new, most of the improvements were made in the Chicago district plants of the company. The balance sheet shows property value at $180,421,368. All the improvements were financed out of earnings, using surplus and funds set aside for depreciation and depletion of minerals. Depreciation and depletion was figured on an almost 5 per cent basis at $9,023,877 on the property value.

Total assets of the company increased from $259,607,822 at the end of 1924 to $277,945,423.28 at the end of 1925. Funded debt decreased $2,260,146 and was at $67,902,368 at the end of 1925 with nearly $1,000,000 in the sinking fund anticipating retirements in 1926.

The financial position shows current assets of $81,898,044.87 against current liabilities of $16,295,564. Net working capital of $65,602,480 increased from $62,967,559.

Money and government securities totaled $14,142,433 against $7,869,786 at the end of 1924. The comparative income account follows:

	1925	1924
Gross income	$29,969,849.14	$23,464,207.30
Depreciation on plants	7,978,647.49	7,719,045.24
Depletion of minerals	1,045,230.09	996,593.07
Special expenses	1,665,116.78	1,971,841.86
Income before charges	$19,280,854.78	$12,776,727.13
Bond interest and discount	4,302,369.39	4,454,431.97
Minority stockholders share in zinc properties profit	50,764.15	30,471.58
Balance	$14,927,721.24	$ 8,291,823.58
Federal tax	1,700,000.00	693,747.81
Net for dividends	$13,227,721.24	$ 7,598,075.77
Preferred dividends	996,877.00	996,877.00
Common dividends	3,950,424.00	4,444,227.00
Surplus	$ 8,280,420.24	$ 2,156,971.77
Less depletion of mineral rights	316,108.50	
Net surplus	$ 7,964,311.74	
Total surplus	$33,382,246.21	$25,417,934.47

Current Statistics of Industry

Structural Steel Sales Lowest in Years

Washington, March 2.—Sales of structural steel in February, with actual bookings of 156,935 tons by 179 companies with a monthly capacity of 264,545 tons, were the lowest since February, 1925, according to returns to the department of commerce and reported briefly in IRON TRADE REVIEW, Feb. 25. Computed total bookings of 179,950 tons were far below the 228,750 tons booked in December. Shipments were maintained at a high rate in January, totaling 210,450 tons compared with 240,950 tons in December. Following are further comparisons of bookings and shipments:

FABRICATION OF STRUCTURAL STEEL, 1913-1925

Year	Monthly capacity Reported by 243 firms	Monthly capacity Total estimated	Annual bookings Per cent of capacity	Annual bookings Computed tonnage
1913	195,480	210,000	50	1,260,000
1914	196,330	211,000	50	1,266,000
1915	198,640	214,000	70	1,797,600
1916	205,425	222,000	69	1,838,160
1917	212,765	231,000	60	1,663,200
1918	224,450	244,000	56	1,639,680
1919	231,640	252,000	53	1,602,720
1920	238,695	260,000	54	1,684,800
1921	242,520	265,000	35	1,113,000
1922	265,035	284,000	64	2,181,120
1923	265,900	285,000	65	2,208,750
1924	274,175	293,000	69	2,426,040
1925	286,335	305,000	74	2,708,400

1925	Actual tonnage	Per cent of capacity	Computed tonnage	Shipments computed
Jan.	147,557	57	173,850	176,900
Feb.	152,074	58	176,900	186,050
March	179,161	69	210,450	222,650
April	200,528	76	231,800	231,800
May	179,527	68	207,400	234,850
June	224,911	86	262,300	234,850
July	212,687	81	247,050	250,100
Aug.	205,121	78	237,900	244,000
Sept.	212,469	80	244,000	240,950
Oct.	235,574	89	271,450	268,400
Nov.	*191,170	71	216,550	225,700
Dec.	†199,858	75	228,750	240,950
Total (12 mos.)			2,708,400	2,754,150
1926				
Jan.	‡156,935	59	179,950	210,450

*Reported by 204 firms with a capacity of 268,720 tons.
†Reported by 200 firms with a capacity of 267,455 tons.
‡Reported by 179 companies with 264,545 tons capacity.

Winter Reduces Shipment of Steel by Rivers

Pittsburgh, March 2.—Adversely affected by ice and cold weather, river traffic in January was much lower than in December as briefly announced in IRON TRADE REVIEW Feb. 18. In January only 24,330 tons was transported over the Allegheny river, as compared with 238,447 tons in December. The January tonnage over the Monongahela river was 1,487,357 tons, as against 1,825,568 tons in December, while that transported over the Ohio river was 155,339 tons in January as compared with 836,650 tons in December.

The following is a comparison of iron and steel shipments over the three rivers by months:

	Allegheny river	Monongahela river	Ohio river
January, 1926	30	16,535	16,700
December	610	20,506	37,423
November	530	25,800	49,041
October	15	22,200	25,260
September	3,560	31,430	22,987
August	.....	29,010	42,004
July	.....	23,960	35,835
June	132	30,000	27,791
May	735	32,479	42,466
April	797	23,350	18,375
March	200	22,328	27,000
February	900	19,350	19,837
January, 1925	.....	23,804	17,825
Totals, 1923	1,064	291,689	190,336
Totals, 1924	56,720	266,074	216,138
Totals, 1925	7,479	304,217	365,844
Total, 1926 to date	30	16,535	16,700

Steel Castings Bookings Hold Steady Rate

Washington, March 2.—Steel castings bookings totaled 84,232 tons in January, as reported to the department of commerce by manufacturers representing over two-thirds the commercial castings capacity of the United States. Bookings were at 83.9 per cent of capacity compared with 85.1 per cent in December. Production data tabulated for the first time in January by the department, totaled 71,996 tons or 71.7 per cent of capacity. Further comparisons follow:

BOOKINGS

	Total net ton	Per cent capacity	Railway specialties net tons	Miscellaneous net tons
1922 totals	812,741	69.6	404,682	408,059
1923 totals	894,780	74.6	386,939	507,841
1923 mo. av.	74,565	74.05	32,245	42,320
1924 totals	772,840	64.1	388,357	384,483
1924 mo. av	64,403	64.1	32,363	32,040
1925 total	731,743	.....	295,525	436,218
1925 mo. av.	60,978	60.7	24,627	36,351
1925				
January	82,922	82.6	40,799	42,123
February	61,535	61.3	27,237	34,298
March	59,508	59.3	21,670	37,838
April	59,008	58.8	22,109	36,899
May	49,619	49.4	16,055	33,564
June	48,413	48.2	16,675	31,738
July	54,474	54.2	19,953	34,521
August	51,358	51.2	18,235	33,123
September	48,827	48.6	17,008	31,819
October	61,044	60.8	20,576	40,468
November	69,527	69.3	31,993	37,534
December	85,397	85.1	43,215	42,182
January, 1926	84,232	83.9	37,677	46,555

PRODUCTION

January,* 1926	71,996	71.7	29,565	42,431

*Data for three companies estimated.

Southwestern Steel & Iron Co., 708 North Main street, Fort Worth, Tex., has increased capital from $100,000 to $200,000.

FoundryEquipmentOrder Decline in January

Orders for foundry equipment in January were valued at $406,221 compared with $416,610 in December, according to returns to the Foundry Equipment Manufacturers' association by 10 and 11 producers in those months. Shipments fell from $472,144 to $437,877 in the December-January period. Unfilled orders as of Feb. 1 were valued at $500,993 compared with $550.016 valuation on those Jan. 1. Following are further comparisons:

1925	Sales	Shipments	Unfilled orders
January	$ 304,724	$ 305,580	$ 431,656
February	326,887	277,855	421,918
March	469,324	348,589	446,895
April	345,907	325,951	539,539
May	332,175	407,339	539,232
June	334,424	318,442	463,431
July	353,560	352,602	460,383
August	580,864	388,370	457,925
September	296,437	351,121	598,143
October	424,054	400,646	544,041
November	480,327	414,148	518,794
December	416,610	472,144	593,455
Total	$4,665,300	$4,362,794	.....
1926			
January	406,221	437,877	550,016
February	.....	.....	500,993

Steel Barrel Sales Gain

Washington, Feb. 23.—Production of steel barrels in January totaling 468,722 showed a slight increase from 467,485 in December. Shipments and stocks on hand dropped during January. Unfilled orders within 30 days increased while those for extended delivery dropped. Data is based on returns from 31 manufacturers to the department of commerce. Following are further comparisons:

	Production	Shipments	Unfilled orders for delivery within 30 days	Unfilled orders for delivery beyond 30 days
1925				
January	420,127	415,040	345,696	1,028,551
February	413,823	407,781	313,544	1,022,580
March	505,429	510,928	399,940	864,920
April	594,971	605,424	411,053	726,499
May	570,962	569,670	313,123	637,230
June	514,913	508,880	269,964	582,630
July	497,152	506,894	314,727	974,656
August	498,449	495,736	263,588	851,079
September	510,869	503,221	237,580	774,996
October	553,545	555,981	356,626	534,278
November	498,929	498,070	251,567	996,978
December	467,485	474,742	368,286	1,377,060
1926				
January	468,722	469,432	431,772	1,334,074

Buffalo Bronze Die Cast Corp., Buffalo, N. Y., has increased its capital from 1250 shares to 1800 shares of preferred, with 1200 shares common unchanged.

Industrial Men in the Day's News

William G. Langford, New President of Richmond Radiator Co.

THE purchasing agents who have become presidents in the iron and steel industry can be counted on one's two hands. He is one of these few.

AS DIRECTOR of purchases, his policy of consideration and courtesy to salesmen has assisted materially in improving the financial wellbeing of the Richmond Radiator Co

MUCH of his leisure time he spends at the Shelter Rock club on Long Island, striving for the coveted "hole-in-one." His vacation hobby, however, is traveling.

IN THE iron and steel industry most chief executives have attained their offices through the channels of production. Many have risen from the ranks of the sales staff, although not so frequently as from among operating men. Those who have climbed upward from the post of purchasing agent are decidedly in the minority.

William G. Langford, recently elected president of the Richmond Radiator Co., New York, to succeed the late Col. Lloyd G. McCrum, is one of these few who can claim the rare distinction of stepping from the office of purchasing agent to leadership of his company. All through his career his activities have been identified with the purchasing end of business administration. In fact, he long has been one of the best known purchasing agents in the country.

Born at Merrickville, Ont., Can., Mr. Langford was educated in the Dominion. For a while he taught classes in public schools and in business college, then came to New York where he has been located since. For 20 years Mr. Langford was purchasing agent for Westinghouse, Church, Kerr & Co., Inc. and his purchases for that important construction interest embraced materials of all kinds and quantities. Five years ago he joined the Richmond Radiator Co. as purchasing agent. It is no secret that the company then was in somewhat embarrassed financial circumstances, and that the manner in which Mr. Langford discharged his duties as purchasing agent had a great deal to do with the company's success in getting on its present sound basis. At any rate, Mr. Langford a year ago was made vice president in charge of purchases. During the intervening period, due to the illness of Col. McCrum, he was acting head of the company much of the time, so that his election as president is a substantial endorsement by the directors of his conduct of the company's affairs *ad interim*.

Mr. Langford for two years was president of the Purchasing Agents' Association of New York. He also served as first vice president of the National Association of Purchasing Agents, and his ideas about the conduct of the office of purchasing director are regarded as exemplary. Mr. Langford always has been known for his considerate and courteous treatment of salesmen. His practice has been to give a hearing to everybody legitimately entitled to one. It is theory that this kind of treatment not only is justified on the grounds of courtesy but also on the count of good business methods, for a purchasing agent must depend on salesmen for a great deal of the technical information he acquires.

As president of the Richmond Radiator Co., Mr. Langford maintains headquarters in New York, where he is in charge of the direction of three important manufacturing units. At one of these plants, at Norwich, Conn., cast iron boilers are produced. The company has two other large plants at Uniontown, Pa., one of which is devoted to the making of radiators and the other enameled ware.

Mr. Langford is a member of the Canadian Club of New York. He depends to some extent on golf for recreation, playing at the Shelter Rock Golf club on Long Island. In summer he spends his vacations traveling.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

CARL WARD has been made vice president and general manager of Hartford Machine Screw Co., Hartford, Conn., eastern division of the Standard Screw Co., Chicago. Mr. Ward, born in Brooklyn, N. Y., in 1893, graduated from Cornell university in 1914 and at first served in the locomotive shops of an eastern railroad. Later he was test and research engineer for the International Paper Co., production engineer with Niles-Bement-Pond Co., New York, and served in a similar capacity at the Watervliet, N. Y., arsenal during the war. For the past seven years he has been with Pratt & Whitney Co., New York, as industrial engineer, plant engineer, general superintendent, works manager and assistant general manager. With the Hartford company he now has charge of sales, finance and manufacturing.

* * *

George Woodruff, vice president of the National Bank of the Republic, has been elected a director of the Interstate Iron & Steel Co., Chicago, succeeding the late Silas J. Llewellyn.

* * *

Knowles Pittman has been appointed sales manager of the Burnside Steel Foundry Co., Chicago. He was formerly sales manager of Nugent Steel Castings Co., Chicago.

* * *

L. M. Hartzell, for many years assistant manager of sales with Carnegie Steel Co. at Cincinnati, has resigned and following a short vacation will engage in the real estate business there.

* * *

John K. Desmond, formerly in the Philadelphia district sales office of Crucible Steel Co. of America, has been appointed Philadelphia district manager of steel sales for Henry Disston & Sons, Inc.

* * *

W. V. Knowles, for the past 10 years district manager at Chicago for the Titanium Alloy Mfg. Co. has become general sales representative at Cleveland. He will also direct sales in Chicago territory.

* * *

H. C. Osman, sales manager of Nugent Steel Castings Co., Chicago, has been elected secretary of the company. He will continue in charge of sales.

C. A. MacDonald, formerly secretary, has been elected treasurer.

* * *

George Endicott, secretary of Wickwire-Spencer Steel Co. for the past 11 years and recently acting in charge of the operating department, has resigned to become a director of the Smith & Dove Mfg. Co., Andover, Mass.

CARL WARD

* * *

Walter Ayer, for 16 years with the Fuller & Johnson Mfg. Co., Madison, Wis., maker of heavy duty gas engines, and during the greater part of the time president and general manager, has retired.

C. L. McMullen, formerly vice president and general sales manager, has succeeded Mr. Ayer as president.

* * *

Sherwood C. Bliss has become associated with Richmond Radiator Co. as assistant to President Langford, in charge of manufacture. Mr. Bliss has been connected in an engineering capacity with the production of boilers and radiators for the past 17 years. As a first lieutenant during the World war, he had charge of the engineering of 4-inch naval guns at Bayonne, N. J. Recently he has been engaged in industrial engineering. He is a member of the Engineering Society of Buffalo and the Society of Industrial Engineers.

* * *

William H. Hulick was elected vice president of the Replogle Steel Co., Wharton, N. J., at a meeting of the board of directors Feb. 24, succeeding L. P. Ross, resigned.

* * *

W. K. Wellman has succeeded W. M. Ernst as Cleveland representative of the Scovill Mfg. Co., Waterbury, Conn., manufacturer of nonferrous products. Mr. Wellman has been with the Scovill company for several years as assistant to Mr. Ernst, who has resigned to devote his attention to other interests.

* * *

Harold Hedden, for nearly 16 years affiliated with the New Jersey Zinc Co., has been appointed Pittsburgh district sales manager succeeding R. L. Cathcart, resigned. For the past three years Mr. Hedden has represented the company in New York state, and prior to that time was in the Pittsburgh sales office with Mr. Cathcart.

* * *

L. J. Simmonds has been appointed district sales manager of the Trumbull Steel Co., Warren, O., at Chicago, with offices in the Continental & Commercial National Bank building, succeeding A. R. Johnson, transferred to New York. Willard Foster will assist Mr. Simmonds.

Mr. Johnson has become district sales manager in New York, in the Grand Central Terminal building. Mr. Johnson for the past ten years has directed the Chicago office.

* * *

R. L. Cathcart, identified for the past 12 years with the New Jersey Zinc Co., has resigned to become vice president and director of the E. E. Zimmerman Co., Pittsburgh, broker in raw materials. Mr. Cathcart formerly was with the Western Electric Co., New York, and later with a New York stock broker. After some years he joined the New York sales office of the New Jersey company and in 1918 was made district manager at Pittsburgh.

Obituaries

ROBERT HOBSON, president of the Steel Co. of Canada Ltd., director of the American Iron & Steel institute, and a national figure in Canadian industry, died at his home in Hamilton, Ont., Feb. 25, at the age of 65. Mr. Hobson played an active part in developing the Canadian steel industry and formerly was president of the Canadian Manufacturers' association. He was born Aug. 13, 1861, at Kitchener, then Berlin, Ont., the son of a noted engineer, and after completing his education first turned to railroad engineering. With his father he constructed many miles of line for the Great Western and Grand Trunk railways. About 1896 Mr. Hobson became secretary-treasurer of the newly organized Hamilton Blast Furnace Co. The production of pig iron in Canada soon became firmly established largely through his efforts, in co-operation with John Milne, stove manufacturer. Four years later the Hamilton company and the Ontario Rolling Mills Co., also of Hamilton, were amalgamated into the Hamilton Steel & Iron Co., Ltd., with Robert Hobson secretary and assistant general manager. The company absorbed in 1910 other related interests, including the Canada Screw Co., Hamilton Tack Co., Montreal Rolling Mills, Canada Bolt & Nut Co. and the Dominion Wire Mfg. Co. At the time the Irondale works were erected, Mr. Hobson was vice president and general manager, succeeding to the presidency in 1916. He was also a director in the Canadian National railways and an officer of the wartime Canadian patriotic fund. He was chairman of the board of the Canadian Locomotive Works, Kingston, a director of the Canadian Northern railway and identified with various other industrial and banking enterprises. He held membership in the advisory council of scientific and industrial research of the American Institute of Mining and Metallurgical Engineers, and was a fellow of the Royal Colonial institute, London.

* * *

Justice W. Stuart Symington Jr. of Baltimore, for many years identified with the T. H. Symington Co. of that city, manufacturer of railroad devices, died in the Johns Hopkins hospital there Feb. 19, at the age of 55. In 1919 Justice Symington was made president of the Association of Manufacturers of War Materials. One of his activities was organization in Chicago of a $6,000,000 unit of the Symington company for making 155 millimeter shells.

* * *

Andrew C. Campbell, president of the A. C. Campbell Co., Bridgeport, Conn., nibbling machinery, also consulting engineer of the American Chain Co., died recently at his home in Waterbury, Conn.

* * *

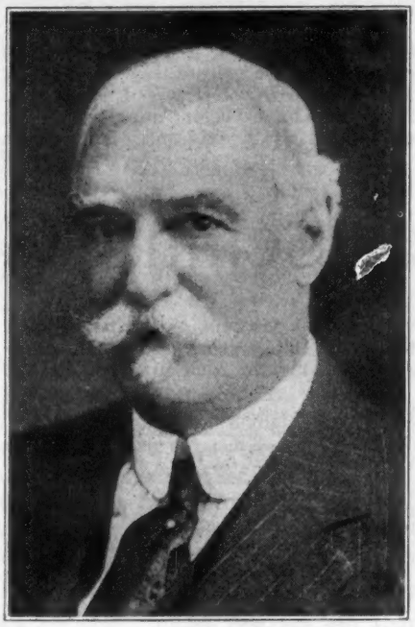
John Donaldson Ormood, for many years with the Donaldson Iron Co., Emaus, Pa., and president since the death of his father several years ago, died at Emaus Feb. 23 at the age of 60. Mr. Ormood was interested also in several cement companies, banks and other commercial enterprises.

* * *

William A. Cunningham, aged 65, a director of the Queen City Supply Co., Cincinnati, distributor of and dealer in factory, mill, machine shop and mine supplies, died at his home in that city Feb. 22, following a brief illness. Mr. Cunningham had been with the company for the past 35 years.

* * *

Harry E. MacCamy, aged 74, who established the Union Iron Works, Spokane, Wash., in 1890, died Feb. 9 at a private hospital in that city. Mr. MacCamy came to Spokane in 1889 and was general superintendent of the Union works until 1912, when he went to Los Angeles to develop an air cooling apparatus which he had invented and patented. He was born at Canton, Ill., in 1852.



ROBERT HOBSON

Richard Ellis Bebb

Tribute Adopted by Directors of Central Steel Co.

RARE tribute to the memory of the late Richard Ellis Bebb, former chairman, Central Steel Co., Massillon, O., was paid recently in a resolution passed by the members of the board. The resolution in part follows:

"Mr. Bebb was a quiet mild-mannered, unassuming, dignified and hard-working man. * * * He worked untiringly and shouldered a large part of the responsibilities of this company, as well as other business enterprises with which he was connected; he had a remarkable gift of clear vision, accurate and profound judgment, strong will, a keen, rapid, logical mind, plus good business sense, and these attributes coupled with his known integrity, resulted in his services being acquired by his many business interests.

"He was cordial in his greetings, warm in his friendships, loyal to his friends, generous in his impulses and companionable at all times. He loved peace and hated strife and contention. His death came at a time in life when he was at the peak of his ability to render valuable service to his friends and business associates, and in his death this company has suffered a great loss and each member of this board a good and true friend. * * *"

Merger of Sheet Mills

Talk of a merger of several non-integrated sheet mills with perhaps a steelmaker included is current. It is known that representatives of a large eastern banking house have been working on the proposition for some weeks, and much progress is claimed by them. Competition among these sheet companies with no steel supply is keen and to merge as many of these plants as possible has appeared logical. Certain important steelmakers identified with the sheet rolling industry as a source of sheet bars, have financial connections that would insure the required backing.

British Market Feels Renewed Impetus

(*Concluded from Page* 603)

that foreign prices might be expected to advance. So far, the prices received in Birmingham have not confirmed this view, and the quotation received three days ago names the following f.o.b. Antwerp prices:—Mild steel ship plates £6 ($29.16), bars and angles £5 7s ($26.00), Thomas steel plates ⅜-inch and upwards £5 10s ($26.73), joists tensile 28/32 tons £5 ($24.30) and universal plates £5 12s ($27.21). These are all competitive prices, though the buyer must take into consideration slow deliveries, as the works are well booked to May.

The principal changes are in semifinished steel, quoted at £5 12s 6d ($27.33) delivered here, the figure at the end of last year being about £5 5s ($25.51). The foreigners state that they can sell their semifinished material more profitably at home. For small-size billets, Birmingham inquirers have been unable to get quotations. It is explained from Paris that the price for reparation coke is now 173 francs delivered works and a further increase is expected. Exporters confidently predict higher French costs due to increases in coke prices, transportation and new taxes. Imports of seminished steel during January were 53,289 tons against 55,124 tons for the same month last year, so that it cannot be said that this important element in production has, so far, shown any sign of real change. This country is still taking large quantities of finished iron and steel of various descriptions.

German Steel Selling Gains Volume

BERLIN, Feb. 18.—(*European Staff Service*)—Final figures concerning the German iron trade in 1925 and the preceding years have now been published. They show that the output of pig iron is lagging slightly behind the prewar figures of the present territory, while the steel production exceeds that figure. Exports are only a slight percentage of the 1913 figures, and the domestic supplies of pig iron in 1925 totaled only 59 per cent and those of steel ingots and castings only 73 per cent of that year. The appended table gives these items. It must be remembered that the import and export figures for 1913 correspond to the old customs boundaries of Germany which included Luxemburg, the Saar, Polish Upper Silesia and Alsace-Lorraine. Although exports are only 58 per cent of those of 1913, they show an advance of 80 per cent as compared with those of 1924. The figures in thousands of metric tons are as follows:

	1925	1924	1913
Pig iron output	10,177	7,812	10,916
Raw steel output	12,193	9,835	11,769
Output of rolled products	10,246	8,174	11,643
Furnaces in blast Dec. 31	83	106	203
Pig iron imports	202	260	126
Pig iron exports	192	56	856
Imports of ingots and castings	214	162	11
Exports of ingots and castings	108	47	701
Total iron and steel imports	2,024	1,604	622
Total iron and steel exports	3,753	2,099	6,514

During recent weeks a decidedly better feeling has been prevalent in the German markets. However, this has mainly resulted from a revival in export trade, while the domestic market shows only small signs of improvement. The improved export business chiefly results from the temporary withdrawal from the market of French and Belgian competitors whose works at present are not in a position to book new orders, their order books being already filled. In December German exports of all iron and steel products advanced to 399,520 metric tons, compared with 321,694 tons in November, while imports continued to decrease and dropped from 94,124 tons to 87,509 tons. German export prices, generally speaking, are not satisfactory to producers. With respect to bars only about 20 per cent of the output should be sold abroad and 80 per cent at home in order to obtain an average selling price which is not too unprofitable for the works. At present, however, the bar union is selling up to 33 1/3 per cent of production abroad as a result of the unsatisfactory working rate of producers.

French Export Market Is Expanding

PARIS, Feb. 18.—(*European Staff Service*)—With parliament engaged in debates over financial problems and new schemes for increasing taxation, French business men are in a quandary as to what the future holds. An increase of 30 per cent in all customs duties is being considered. Increased taxes on sales as well as a tax on exports are also a part of the program of Doumer, minister of finance. As all these subjects bear directly upon the industrial life of the country one readily appreciates the enormous difficulties which confront leaders of industry in France pending financial legislation.

Considerable unrest is evident in business circles. Politicians are being blamed for the present crisis. Under the Dawes plan France will receive from Germany during 1926 merchandise to apply on reparations account having a total value of three hundred million francs, or approximately $12,000,000 at current exchange rates. Many are of the opinion that these deliveries will cause certain French industries to suffer, particularly manufacturers of iron and steel products.

Prices continue to advance. Wage increases and the rising cost of raw

Franc—$0.375

materials such as coal, coke and pig iron are being reflected in the price of finished products. As yet, however, adjustments upward in prices of machinery, tools and other similar products do not compensate for the advance in raw materials. Pig iron and steel prices are 25 to 40 per cent higher than a few months ago, whereas transformed products have advanced only 15 to 20 per cent. The preceding remarks apply to quotations in terms of paper francs. It is of interest to note that, on a gold basis, French metallurgical prices now average 20 per cent lower than those prevailing in 1913. As prices in other iron and steel producing countries are somewhat higher than during prewar days, France's export trade is expanding rapidly.

The Chantiers de la Gironde at Bordeaux expects to launch within the next few weeks an oil tanker which they have built for the Standard Oil Co. They also have a large tanker under construction for the Argentine government.

The pig iron market is active and prices are firm. Phosphorus pig iron is quoted at 340 Belgian francs ($14.45) f.o.b. Antwerp. Furnaces have not announced the domestic prices for foundries for March, but it is rumored that phosphorus pig iron will be advanced to 415 francs ($15.56) per metric ton f.o.b. furnace. Hematite pig iron, silicon 3 to 3.50 per cent, sulphur 0.05 per cent maximum, phosphorus 0.10 per cent maximum, is quoted at 530 francs ($19.87) delivered.

Buyers of semifinished steel for export are experiencing difficulty in placing their orders. Basic bessemer blooms are quoted at £4 2s ($19.90) and sheet bars at £4 14s ($22.80) f.o.b. Antwerp. German competition and the resumption of operations in the Charleroi district will, it is believed, force prices down.

According to a dispatch from Brussels the work of organizing an international rail syndicate is progressing. Difficulties encountered with Luxemburg makers have been overcome and a complete accord is anticipated by the middle of March. The cartel will be known as IRMA. It is also reported that French pipe manufacturers have entered the German-Czechoslovakian tube syndicate.

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

DOMINION ALLOY STEEL CORP., Sarnia, Ont., which completed its first unit in May, 1925, is considering the establishment of its second unit, which will produce black sheets. The present unit is devoted to galvanized sheets. The new department will be housed in one of the present buildings. Among equipment required, according to W. B. Boyd, president of the company, will be a large motor, hot rolls, reheating furnaces, annealing boxes and shears. Capacity of the addition will be about 30,000 tons, a quarter of which will be required for the galvanizing department, and the remainder will be for the market. A bar mill and open-hearth furnaces are planned as further developments.

* * *

LYNCH GLASS MACHINERY CO., Anderson, Ind., T. C. Werbe president, has booked an order for a carload of glass-making machines to be shipped to Mexico.

* * *

CITY of Milwaukee is considering bids for a 25,000,000-gallon pumping unit for the North Point pumping station. The addition to this station also will include a machine and service shop, pipe shop and chlorine room.

* * *

ROCK ISLAND BRIDGE & IRON WORK, Rock Island, Ill., has reelected Walter A. Rosenfield president, Edward Manhard vice president, William G. Murphy secretary and M. S. Carlson treasurer.

* * *

STOUT METAL AIRPLANE division of the Ford Motor Co. has nearly completed its plant at Detroit, replacing the one recently burned. It is about four times as large as the former plant. It will cover 125 x 500 feet, with a hangar 123 x 300 feet.

* * *

UNION SWITCH & SIGNAL CO., a subsidiary of the Westinghouse Air Brake Co., Swissvale, Pa., has taken contracts for 250 color light signals and other apparatus for the New York Central railroad; 185 signals for the Nashville, Chattanooga & St. Louis railroad; 74 three-color light signals and apparatus for the Cleveland, Cincinnati & St. Louis railroad and three 12-way electro-pneumatic push-button machines for the Pennsylvania railroad.

* * *

CENTURY FENCE CO., Waukesha, Wis., has booked an order for 8500 lineal feet of chain link fencing for the new government veterans' hopsital at Oteen, N. C. This is an unusually large individual order.

* * *

W P. ANDERSON CO., recently organized at Sidney, O., to manufacture automobile bodies, is being established in the plant formerly occupied by the Pioneer Pole & Shaft Co. The company is composed of W. P. Anderson and O. F. Wright, formerly with the Anderson Body Co.

* * *

BATAVIA METAL PRODUCTS CORP., Batavia, N. Y., has elected Daniel W. Tomlinson president, Arthur G. Hough vice president and Mrs. Josephine B. Miller secretary and treasurer. Directors consist of the officers and Dr. C. Waldo Stickle, W. H. Adsit.

* * *

FRENCH BATTERY CO., Madison, Wis., has taken a 6-year lease with purchase option, on the large plant built during the war by the Four Lakes Ordnance Co., which has been vacant since the armistice. This plant will give the company an increased of floor space from 50,000 to 75,000 square feet.

* * *

CHICAGO BY-PRODUCT COKE CO., a subsidiary of the Peoples Gas Light & Coke Co., Chicago, probably will be absorbed by the latter within a year. An increase of capital stock of the latter from $50,000,000 to $60,000,000 has been voted, to pay off bonds on the former company's plant, which was built by the Koppers Co., Pittsburgh.

* * *

CROWN PIPE & FOUNDRY CO., Ironton, O., has been placed in the hands of S. E. Stephenson, president of the Wellston Iron & Furnace Co., Jackson, O., and I. P. Blanton, president of the Belfont Steel & Wire Co., Ironton, as co-receivers, by Judge Benner James at Jackson. Operations in production of soil pipe will be resumed at once, after the plant has been idle since early in 1925.

* * *

RICHMOND RADIATOR CO., New York, has elected W. G. Langford, formerly vice president, to the presidency, succeeding the late Col. Lloyd G. McCrum. A. H. Schroth was elected vice president, H. N. Kelley secretary-treasurer and N. St. Peter assistant secretary-treasurer. Floyd W. Parsons, Hamilton Pell and Francis E. Smith were re-elected directors for three years.

* * *

HENRY DISSTON & SONS INC., Philadelphia, have added a machine knife department to their branch plant at Sixth and Baymiller streets, Cincinnati. Hardening and tempering equipment and machinery for grinding and beveling high-speed planer knives has been installed. This plant will serve users of machine knives in the Middle West and parts of the South, territory formerly covered only for saws.

Completing Pipe Plant

The plant being erected by the American Cast Iron Pipe Co., Birmingham, Ala., for the manufacture of centrifugal cast iron pipe in refractory molds will be ready for operation on a commercial basis by the middle of May. The plant will manufacture pipe in 16-foot lengths and in diameters of 4, 6, 8, 10 and 12 inches. The plant will be capable of operation 24 hours per day with a potential capacity equivalent to two 6-inch 16-foot lengths per minute.

The new pipe will be bell and spigot with bead on the spigot end, and will be made under specifications providing for seven standard weights. The new pipe is of gray iron structure.

Development of this process has been under way at the plant of the American Cast Iron Pipe Co. for the past three years. Specifications now are being prepared and will be ready for circulation about March 1.

United States Radiator Corp., Buffalo, N. Y., has increased capital 90,000 to 250,000 shares, 50,000 at $100 each and 200,000 common no par.

Warehouse Market Is Stiffening

Demand Holds at Good Volume—Heavy Spring Buying Expected

BUYING of iron and steel products from warehouses is spotty, some districts showing steady improvement while others reflect declines. Prices are stiffening in sheets generally, and other products are holding firm.

Leading warehouse sellers in the New York metropolitan district have advanced prices on galvanized sheets $3 a ton, now quoting 5.65c. This action came as no surprise in view of lengthening mill deliveries, and the stiffening influence this situation has exerted over the past two or three weeks. Black sheets are firmer, now holding generally at 4.50c. Blue annealed is holding steady. During the past few days blue annealed sheets have been in heavy demand. The month just closed showed a falling off from January but March holds promise of a revival.

Warehouse business at Cincinnati is exceedingly slow for this time of the year, according to jobbers. Buyers are manifesting little interest and are placing orders only as their requirements fall due. Deformed bars and structurals are in light demand this being partially due to the inclement weather. Prices are firm.

Warehouses at St. Louis find a slowing down in general manufacturing demand. The decrease was no larger than seasonal, and total sales for February, according to early reports, were about on a parity with the same month in 1925. Demand for plates and shapes is fairly good, and up to expectations. In building materials the best seller has been reinforcing concrete bars.

Demand for iron and steel from warehouses in the Cleveland district is improving. One large jobber reports February buying far above January and current demand exceptionally good. A warehouse in this district issued a new list recently quoting plates, shapes and bars at 3.00c Cleveland and other jobbers are meeting competition. Although a reduction from the former minimum, this represents a stiffening of the market as keen shading previously had obtained much lower quotations.

The Lake County Screw & Bolt Co. at Gary, Ind., has filed a certificate of final dissolution.

Quotations at Cents Per Pound at Leading Market Centers

STEEL BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.15c
Los Angeles	3.05c
New York	3.24c
Philadelphia	2.90c to 3.20c
Pittsburgh	2.90c
Portland	3.00c
San Francisco	3.30c
Seattle	3.25c
St. Louis	3.15c
St. Paul	3.25c

IRON BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.15c
New York	3.24c
Philadelphia	2.90c to 3.20c
St. Louis	3.25c

REINFORCING BARS

Boston	3.265c to 3.50c
Buffalo	3.30c
Chicago, billet	2.60c
Chicago, rail steel	2.00c
Cincinnati	3.30c
Cleveland	2.40c to 3.10c
Detroit	3.15c
Los Angeles, C. L.	3.05c
Los Angeles, L. C. L.	3.30c
New York	2.95c to 3.15c
Philadelphia	3.00c to 3.25c
Pittsburgh	2.50c to 2.60c
San Francisco, C. L.	3.35c
San Francisco, L. C. L.	3.80c
Seattle	3.50c
Youngstown	2.50c to 2.60c

STANDARD STRUCTURAL SHAPES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.00c
Detroit	3.25c
Los Angeles	3.05c
New York	3.34c
Philadelphia	2.70c to 3.05c
Pittsburgh	3.00c
Portland	3.10c
San Francisco	3.30c
Seattle	3.35c
St. Louis	3.25c
St. Paul	3.35c

PLATES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-inch and thicker	3.00c
Cleveland, 3/16-inch	3.225c
Detroit	3.25c
Detroit, 3/16-inch	3.45c
Los Angeles	3.15c
New York	3.34c
Philadelphia	2.70c to 3.05c
Philadelphia, 3/16-inch	2.85c to 3.20c
Pittsburgh	3.00c
Portland	3.25c
San Francisco	3.30c
Seattle	3.25c
St. Louis	3.25c
St. Paul	3.25c

NO. 10 BLUE ANNEALED SHEETS

Boston, 3/16-inch	3.915c
Buffalo	3.90c
Chicago	3.50c
Cincinnati	3.60c
Cleveland	3.25c
Detroit	3.65c
Los Angeles	3.75c
New York	3.89c
Portland	4.25c
Philadelphia	3.50c
San Francisco	3.75c
Seattle	4.50c
St. Louis	3.60c
St. Paul	3.75c

NO. 28 BLACK SHEETS

Boston	5.25c
Buffalo	4.60c
Chicago	4.10c
Cincinnati	4.55c
Cleveland	4.10c
Detroit	4.25c
Los Angeles	4.75c
New York	4.50c
Philadelphia	4.65c
Portland	5.25c
San Francisco	4.75c
Seattle	5.50c
St. Louis	4.60c
St. Paul	4.35c

NO. 28 GALVANIZED SHEETS

Boston	6.25c
Buffalo	5.90c
Chicago	5.25c
Cincinnati	5.65c
Cleveland	5.25c
Detroit	5.50c
Los Angeles (corr. 28 ga.)	6.00c
New York	5.65c
Philadelphia	5.85c
Portland	6.25c
San Francisco	6.00c
Seattle	6.50c
St. Louis	5.70c
St. Paul	5.60c

BANDS

Boston	4.015c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.65c
Detroit	3.80c
Los Angeles	3.90c
New York	3.99c
Philadelphia	3.75c to 3.90c
Pittsburgh	3.60c
Portland	4.25c
San Francisco	4.15c
Seattle	4.25c
St. Paul	3.90c

HOOPS

Boston	5.50c
Buffalo	4.05c
Chicago	4.15c
Cleveland	3.65c
Detroit	4.30c
New York	4.49c
Philadelphia	4.00c to 4.25c
Pittsburgh	3.60c
Seattle	5.00c
St. Paul	4.40c

COLD FINISHED STEEL

	Rounds and hexagons	Flats and squares
Boston	4.05c	4.55c
Buffalo	3.90c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.90c	4.40c
Detroit	3.85c	4.25c
Los Angeles	5.25c*	.....
New York	4.00c	4.50c
Philadelphia	4.00c	4.50c
Pittsburgh	3.60c	4.10c
Portland	5.00c*	.....
San Francisco	4.25c*	.....
Seattle	5.00c*	.....
St. Paul	3.85c	.....

*Rounds only.

COLD ROLLED STRIP

Boston, .100 inch, 500 lb. lots	6.30c
Buffalo	6.35c
Chicago	6.25c
Cincinnati	7.15c
Cleveland, over 500 lb. lots	5.95c
Detroit	6.20c
New York	6.25c
Philadelphia	6.25c
Pittsburgh	6.30c

FOREIGN IRON AND STEEL
New York duty paid

Swedish, hollow drill steel	15.00c
Swedish iron bars, round	6.75c
Flats and squares	7.00c

WELDED PIPE
Discounts from warehouse, New York City
Standard Steel Pipe
WROUGHT STEEL PIPE

	Black	Galvanized
⅛-inch butt	—23	+21
¼ to ⅜-inch butt	—36	— 3
½-inch butt	—46	—29
¾-inch butt	—51	—37
1 to 3-inch butt	—53	—39
2-inch lap	—40	—22
2½ to 6-inch lap	—48	—35
7 and 8-inch lap	—44	—17
9 and 10-inch lap	—38	—14
11 and 12-inch lap	—37	—12

WROUGHT IRON PIPE

	Black	Galvanized
¼ to ⅜-inch butt	+44%	+78%
½-inch butt	— 4	+19
¾-inch butt	—11	+ 9
1 to 1½-inch butt	—14	+ 6
2-inch lap	— 5	+14
2½-inch lap	— 9	+ 6
3 to 6-inch lap	— 3	+ 6
7 to 12-inch lap	— 3	+16

Construction and Enterprise

Concise and Timely Business Building Opportunities from the Field of Industry

Where additional information is presented, reference is made to date of issue in which previous item appeared.

BIRMINGHAM, ALA.—G. C. Phillips Tractor Co. is erecting a plant for building tractors and road-building machinery at Second avenue and Seventh street.

HOLT, ALA.—Central Foundry Co. has started construction of a pattern building. M. L. Waddell has the contract.

REDWOOD CITY, CALIF.—City trustees will take bids soon for a 1-story machine shop 25 x 40 feet, through W. A. Price, clerk.

LITTLE ROCK, ARK.—Hot Springs Plumbing & Machine Co. has been incorporated with $25,000 capital by A. C. Callahan and Louis Loeffler.

LOS ANGELES.—Southern California Iron & Steel Co. will build a 1-story addition 64x190 feet with crane runway 62x100 feet.

OAKLAND, CALIF.—Atlas Imperial Engine Co., Nineteenth street, will build a 1-story addition. General contract to H. J. Christenson, 505 Seventeenth street, Oakland.

DANBURY, CONN.—Schwartz Co., 284 Main street, will build a 2-story garage and repair station 80 x 100 feet.

NEW BRITAIN, CONN.—American Hardware Corp., 10 Franklin square, will build a 2-story plant 60 x 360 feet.

LIVE OAK, FLA.—Wargo Foundry Co. plant, idle for some time, will be refitted and equipped for production by H. J. Anglin and W. R. McKenna, Thomasville, Ga.

CHICAGO—Model Brass Foundry, 502 South Franklin street, will build an addition 32 x 45 feet to its foundry.

CHICAGO—Hendrickson Motor Truck Co., 3538 South Wabash avenue, will build a 1-story machine shop 50 x 175 feet.

CHICAGO—Commercial Auto Body Builders, 8245 Archer avenue, will build a 1-story factory and garage 136 x 150 feet at 3239 Archer avenue.

CHICAGO—Dirigold Corp., 78 East Jackson boulevard, jewelry manufacturer, has bought the body plant of the Haynes Automobile Co., Kokomo, Ind., and will remove its plant there.

CHICAGO—Electric Instrument Co., O. Simpson president, 1640 Walnut street, has let contract to B. J. Regnell, 19 South LaSalle street, for a 2-story top addition 75 x 100 feet.

CHICAGO—Caloray Mfg. Co., 220 North State street, has been incorporated with 500 shares no par value to manufacture machinery for light and heat medical treatments by J. Leete Welch, J. J. Buckley and John Gutknecht, 111 West Washington street.

CHICAGO—Peoria Foundry Co., 140 South Dearborn street, has been incorporated with $70,000 capital to operate a foundry by J. J. Goshin, J. W. McAuliffe and M. M. Soentgerath. Tourje, Waugh & McClellan, 140 South Dearborn street, are correspondents.

CHICAGO—Seymour Architectural Iron Co., 1635 Fulton street, has been incorporated with $30,000 capital to manufacture ornamental iron and bronze by Frederick C. Seymour, John G. Hearned and Roger H. Mullen. M. H. Riese, 818 Reaper building, is correspondent.

CHICAGO—C. A. Boyle & Co., 155 North Union avenue, has been incorporated with $20,000 capital to manufacture bathroom specialties by Emery C. Perry, Charles A. Perry, William A. McHie and Catherine Perry. Q. J. Chott, 106 North LaSalle street, is attorney.

KANKAKEE, ILL.—Cleveland, Cincinnati, Chicago & St. Louis railroad, W. S. Burnett, chief engineer, Big Four building, Cincinnati, has let a contract to A. J. Glaser, Muncie, Ind., for an engine terminal addition.

MOLINE, ILL.—Harrington-Seaberg Fire Alarm Telegraph Co., 1708 Third avenue, will build a 3-story plant 60 x 120 feet.

HAMMOND, IND.—Haess Bros. will build a 1-story machine shop 85 x 160 feet, general contract to the Austin Co., Cleveland.

INDIANAPOLIS, IND.—Parts Corp., 733 Virginia avenue, manufacturer of automobile equipment and parts, will build a 1-story addition.

DAVENPORT, IOWA—Blackhawk Foundry & Machine Co., W. Voss president, 323 Clark street, is having plans made for a 2-story foundry addition 100 x 110 feet.

MARSHALLTOWN, IOWA—Fisher Governor Co., Jacob Eige manager, is having plans made for a 1-story machine shop 50 x 60 feet.

NEW ORLEANS, LA.—Equitable Equipment Co., Inc., Newville Levy vice president, Whitney building, has bought ten acres which will be developed for machine shops for locomotive repair and general construction of machinery. Will build office structure 30x80 feet.

BALTIMORE, MD.—Alpha Brass Corp., 408 West Redwood street, has been incorporated by William A. Cavey and associates.

BALTIMORE, MD.—Hutchinson Bros., 5 South Howard street, manufacturer of furnaces and parts, will build a 1-story machine shop 32x100 feet.

BOSTON—D. R. Campbell Machine Co., 52 Purchase street, is considering bids on a 1-story plant 40x110 feet at Dorchester, Mass.

DETROIT—Detroit & Michigan Stove Co. William T. Barbour manager, 6900 East Jefferson avenue, will build a 1-story pattern shop 50 x 140 feet.

DETROIT.—Vulcan Iron & Wire Works, 409 East Fort street, Thomas J. DeLaney president, has been incorporated to manufacture wire and iron work for industrial and building purposes.

DOWAGIAC, MICH.—Premier Warm Air Heater Co. is considering plans for a 2-story addition 100x100 feet for storage and distribution service.

FLINT, MICH.—Buick Motor Co. has awarded contract for 1-story addition 138x600 feet, first unit of its expansion program.

HAMTRAMCK, MICH.—Dodge Bros. Inc., F. J. Haynes president, 7900 Joseph Campau avenue, is making plans for a 1-story sheet metal shop 56 x 80 feet.

HIGHLAND PARK, MICH.—Huggins Tool Co. is taking bids on a 1-story addition 100x 120 feet, for which equipment will be needed.

HIGHLAND PARK, MICH.—Huggins Tool Co. is taking bids through R. Arthur Bailey, Detroit for a factory addition 100x120 feet.

HIGHLAND PARK, MICH.—Detroit Die & Tool Co., C. D. Buell president, 248 West Congress street, Detroit, will build a 1-story plant 119 x 120 feet.

HIGHLAND, PARK, MICH.—William Ford & Co. Inc., William Ford president, 15841 Second boulevard, Highland Park, will build a 1-story plant 70 x 200 feet for the manufacture of automatic shovels.

KALAMAZOO, MICH.—Textile Leather & Metal Preserver Co. 2233 Superior street, is planning erection of a plant to manufacture its product.

ROCHESTER, MINN.—Bids will be received by S. L. Seaman, clerk of the board of education, until Feb. 25, for general contract, power plant equipment, tanks, pumps, vacuum cleaning system, water softeners, piping, and temperature control in central power plant. Harold H. Crawford, Rochester, is architect. Frank Tustison Co., Minneapolis, is engineer.

ST. PAUL, MINN.—Auto Engine Works Inc., J. D. Mooney president, 1200 University avenue, will take bids shortly for a 2-story machine shop 100 x 175 feet. J. W. Stevens, Exchange bank, is architect.

GREENVILLE, MISS.—Charles Berry has acquired a building which he will equip for manufacture of cotton picking machinery.

KANSAS CITY, MO.—Kansas City Hay Press Co. will build a 1-story warehouse 70 x 180 feet adjoining its plant.

ST. LOUIS—Flori Bros. Machine Co., 1214 Clark avenue, has been incorporated with $10,000 capital to manufacture machinery by Jules L. Flori and Louis R. Flori.

ST. LOUIS—Diamond Steel Highway Sign Co. has been incoporated to manufacture steel devices by W. P. Luce and E. L. McGill, 202 North Second street.

ST. LOUIS—Materne Heating & Power Piping Inc., Eighth and Rutger streets, has been incorporated by Harry P. Materne, to manufacture sheet metal products.

ST. LOUIS—St. Louis Aluminum Co. has been incorporated to manufacture aluminum products by W. S. Bremen, Boatmens Bank building.

ST. LOUIS—Koken Co., W. F. Koken president, 2528 Texas avenue, is having plans made for 14 buildings at 3300 Morgansford road. L. A. Carter, 3560 Chouteau street, is consulting engineer.

ST. LOUIS—Permway Electric Mfg. Co., 2129 Pine street, has been incorporated with $10,000 capital to manufacture electrical machinery

and supplies by Eugene F. Reinhardt, Nolan DeWoskin and J. Melvin Levi.

ST. LOUIS—Halpin & Kohlbry Inc., has been incorporated with $2000 capital to deal in steelworking machinery, tools and supplies by J. Breen Halpin, 6018A Pershing avenue, and F. Paul Kohlbry.

ST. LOUIS—St. Louis Aluminum Co. has been incorporated with 100 shares no par value to manufacture aluminum products by Charles P. Howland, Robert B. Howland and W. S. Bremer. Clarence Case, Boatmens Bank building, is attorney.

ST. LOUIS—St. Louis Bumper Mfg. Co. has been incorporated with $5000 capital to manufacture automobile and truck bumpers, accessories and parts by W. R. Mayne, E. C. Hartman and W. H. Woodward. Fordyce, Holliday & White, 506 Olive street, are attorneys.

ST. LOUIS—Southern Wheel Co., F. C. Turner first vice president, Commonwealth building, Pittsburgh, will build a foundry, two units. one story, 80 x 260 feet and 65 x 226 feet.

BEATRICE, NEB.—J. H. Von Steen Co., Third and Market streets, will build a 2-story plant to replace its fire loss. The company manufactures wire fencing.

HARRINGTON, NEBR.—City council is considering plans for new municipal electric plant. Diesel Engineering Co., Lincoln, engineers.

HASTINGS NEBR.—Western Land Roller Co., manufacturer of road machinery and grading equipment, is having plans made for a 2-story plant.

KEARNEY, NEBR.—Company now being formed with H. G. Mattson interested, will build canning factory to cost $30,000.

MERNA, NEBR.—The Nebraska Electric Power Co., Broken Bow, will build 12 mile transmission line between Merna and Anselma.

OMAHA—The Chicago, Burlington & Quincy railroad will enlarge and install new equipment in roundhouse to cost $60,000.

OMAHA—Bids will be taken about March 15 by the Metropolitan Utilities Power Co. for 3-story, 138x170, warehouse and service building to cost $225,000. John Latenser & Sons, 732 Peters Trust building, Omaha, are architects.

BLOOMFIELD, N. J.—Bloomfield Pattern

Industrial Business Changes

BURNSIDE STEEL CO., Ninety-second street and Kimbark avenue, Chicago, has changed its name to Burnside Steel Foundry Co. Officers and management will remain unchanged.

* * *

Clifford Peterson Tool Co. has bought a 4-story building at 123 North Jefferson street, Chicago, and will move its business there.

* * *

Ashland Fire Brick Co., Ashland, Ky., has removed its New York office from 50 Church street to 110 East Forty-second street.

* * *

Columbia Steel Corp. has moved its offices from the Balfour building to the Matson building, 215 Market street, San Francisco.

* * *

Wayne Heater Corp., Richmond, Ind., has been sold to the Loudenschlager Foundry Co., Columbus, O. Its product is a smokeless boiler.

* * *

Cutler-Hammer Mfg. Co., Milwaukee, has opened a sales office in the Healey building, Atlanta, Ga., in charge of A. C. Gibson, formerly of the Philadelphia office.

* * *

Borchert-Ingersoll, Inc., distributor of contractors' supplies and equipment, 2360 University avenue, St. Paul has moved from the second to the first floor.

* * *

Hadfield-Penfield Steel Co., Bucyrus, O., E. H. Haslam president, has incorporated the Era Steel Co. to take over the manufacture and sale of alloy steel products of the company as a separate unit.

* * *

Rivers Tool Machine Co., Three Rivers, Mich., is now owned entirely by Glenn Hill, as he has bought the interest of Arthur Lucas, his associate. No change will be made in the policy of the company.

* * *

Textor Chemical Laboratories, conducted by Oscar Textor, Ralph B. Textor and B. O. Crites, has removed from 603 Superior avenue to 1165 West Sixth street, in its own building designed especially for laboratory purposes.

* * *

Stolper Steel Products Co. is the new name adopted by the A. B. & B Sheet Metal Works, 3300 Fond du Lac avenue, Milwaukee, Charles Stolper president. The company is making extensions and has increased its capital.

* * *

Raymond Bros. Impact Pulverizer Co., has moved it New York office from 43 Broad street to 342 Madison avenue, S. B. Kanowitz is eastern manager there. This organization is a subsidiary of the Combustion Engineering Corp. and manufactures equipment for coal pulverizing.

* * *

Vulcan Mold & Iron Co., Latrobe, Pa., has appointed Park & Williams Inc., Real Estate Board building, Philadelphia, its eastern representative, succeeding C. C. Ostrum, who has resigned that connection to become president of the Foster Merriam Co., Meriden, Conn.

* * *

American Hoist & Derrick Co., St. Paul, Minn., has opened a branch office at 1943 Railway Exchange building, St. Louis, in charge of Ward B. Maurer, who has been with the company several years, previously being on the engineering staff of the Baltimore & Ohio railroad.

* * *

Union Tank Car Co., will remove its general offices from New York to Chicago during the summer, to have a location more centrally situated. It has rented two floors in the Metropolitan building, Randolph and LaSalle streets. The company owns and operates tank cars.

* * *

B. Nicoll & Co. Inc., New York, distributors for French pipe, have opened an office at Los Angeles, in the W. M. Garland building, 117 West Ninth street, to operate as a branch of the San Francisco office. The Pacific Water Works Supply Co., Arcade building, Seattle, has been appointed selling agent for Oregon and Washington.

* * *

Climax Engineering Co., Clinton, Iowa, has appointed the Briggs-Weaver Co., Dallas, Tex., its district representative for industrial uses in Texas; Clark Engine Co., Wichita Falls, Tex., for oil drilling purposes; Petroleum Electric Co., Tulso, Okla., for that state. These offices will be under the supervision of P. J. Dasey, Tulsa, in charge of southwestern territory.

Iron and Manganese Ores and Minerals

Iron Ore

LAKE SUPERIOR ORES

Per Gross Ton Lower Lake Ports

Old range bessemer, 51½ per cent iron	$4.55
Mesabi bessemer, 51½ per cent iron	4.40
Old Range nonbessemer, 51½ per cent iron	4.40
Mesabi nonbessemer, 51½ per cent iron	4.25

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 53 to 63 per cent	9.00 to 10.50
Copper free low phosphorus 53 to 65 per cent	nominal

FOREIGN IRON ORE

Cents per unit, f.o.b. cars Atlantic ports

Spanish low phosphorus, 52 to 54 per cent	11.00 to 12.00
Algerian low phosphorus, 52 to 54 per cent	10.00 to 10.50
Riff low phosphorus, 65 to 66 per cent	9.50 to 10.00
Swedish and Norwegian low phosphorus, 68 per cent	11.00 to 11.50
Swedish foundry or basic, 66 to 68 per cent	10.00
Spanish foundry or basic, 50 to 54 per cent	8.50 to 9.50
Algerian foundry and basic, 50 to 54 per cent	9.25 to 9.75

Manganese Ore

Prices do not include duty at rate of 1 cent per pound of metallic manganese contained.

Brazilian, minimum 47 per cent.....nominal
Indian minimum 47 per cent.....nominal
Caucasian, 53 to 55 per cent.....
Washed, 42 cents c.i.f. tidewater

Fluor Spar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$17.50
Washed gravel, imported duty paid eastern tidewater, per net ton	17.50 to 18.25

Works has been incorporated with $20,000 capital by Peter J. McMillin, Joseph G. Kampman and Robert E. Young, East Orange. F. R. and F. H. Pilch, Bloomfield, are attorneys.

CAMDEN, N. J.—Penn-Jersey Steel Co., 1450 Ferry avenue, will build a 1-story storage and distribution plant 70 x 200 feet. Contract to J. D. Hill, 122 Woodlawn avenue, Collingswood, N. J.

FERNWOOD, N. J.—Ajax Electrothermic Corp., 636 East State street, Trenton, N. J., is having plans drawn for a 1 and 2-story plant at Fernwood, 60 x 200 feet.

HOBOKEN, N. J.—Thomas Wire & Spring Co. has been incorporated with $120,000 capital by John Petkovitch, Bismark C. Moore and Richard W. Gutheil. Lichtenstein, Schwartz and Friedenberg, Hoboken, are attorneys.

JERSEY CITY, N. J.—Camith Corp. has been incorporated with $200,000 in preferred stock and 1000 shares no par value by Charles E. Campbell, Peter B. Smith and Bernar Eijhinse. Brannigan & Smith, Jersey City, are attorneys.

NEWARK, N. J.—New England Button Co. Lawrence and Mechanic streets, will rebuild the portion of its plant recently burned.

NEWARK, N. J.—Essex Burner & Refrigerator Co. has been incorporated with 1000 shares no par value by Charles E. Rogers, Benjamin Shanefield and Norman B. Grobert. E. R. McGlynn, Newark, is attorney.

NEWARK, N. J.—Newark Pattern Works has been incorporated to operate a foundry with $125,000 capital, by Henry L. Rubovitz, Newark; Charles E. Rubovitz, Irvington; Gussie R. Kabot, Bolleville. W. Eugene Turton, Newark, is attorney.

NEWARK, N. J.—Chrome Alloy Tube Corp. has been incorporated with $10,000 capital by Ennis W. Bachman, and Stanley M. Bachman, Maplewood; and Archer W. Bachman, South Orange. A. P. Bachman, Maplewood, is attorney.

NORTH BERGEN, N. J.—Atlantic Tank & Barrel Corp., M. R. Hert manager, Fifteenth street, Hoboken, N. J., will build a 1-story factory 120 x 180 feet. General contract to Walter Kidde & Co., 140 Cedar street, New York.

PASSAIC, N. J.—Arkay Supply Co. has been incorporated with $100,000 capital to manufacture plumbing supplies by Nockim Riskin, John Riskin and Joseph Kauffman. Winthrop Watson, Passaic, is attorney.

PATERSON, N. J.—Van Vlandeeren Machine Co., 2 Broadway, manufacturer of textile machinery, is having plans made for a 2-story addition 40 x 76 feet and alterations in its plant.

PATERSON, N. J.—Oil Heat & Power Co. has been incorporated with $100,000 capital by John N. Norris, Westfield; Robert H. Sillers, William G. Casperson, Montclair. J. Chester Massinger, Patterson, is attorney.

PLAINFIELD, N. J.—Uncle Sam Electric Corp. has been incorporated with 100 shares no par value by Elizabeth M. Barnes, Hasbrouck heights; Frances Hoffman and Louis Mehl, New York. Willard S. McKay, New York, is attorney.

SOMERVILLE, N. J.—Somerville Iron Works, manufacturer of soil pipe and fittings, is considering plans for a factory branch at Quincy avenue and Ninety-fifth street.

SOUTH KEYPORT, N. J.—Industrial Conveyor Co., J. Carle Anderson president, whose plant was burned, has leased a portion of the plant of the Metal Fabrics Co., Division and Hurley streets, and will resume production.

TRENTON, N. J.—Household Mfg. Co. has been incorporated with $25,000 capital to manufacture household utensils by Vincent Caputi, Louis J. Pianarosa and Anthony Selvaggi. Joseph J. Felcone, Trenton, is attorney.

WEIDMAN, N. J.—The DuPont Engineering Co. is inquiring for structural steel for a power house here.

ALBANY, N. Y.—Mechanical Heat & Cold Mfg. Co. has been incorporated with $25,000 capital to manufacture oil burners by W. Sann, and G. H. Zwick. C. Sann Jr., Albany, is attorney.

BROOKLYN, N. Y.—Alpha Steel Partition Corp. has been incorporated with $20,000 capital by H. B. Altenhaus, S. Heyman and D. Nagel, 298 Putnam avenue.

BROOKLYN, N. Y.—Tinplate Lithographing Co. has been incorporated with $50,000 capital by H. M. Harner, G. J. Sproul and G. C. Seeba. Sproul, Harner & Sproul, 1 Madison avenue, are attorneys.

BUFFALO—Great Lakes Cement Co. has bought a site on the water front and will built a plant for the manufacture of cement.

BUFFALO—Republic Metalwork Co., C. W. Wells president, is having plans made for a 3-story addition to its plant, 52 x 104 feet at 90 Alabama street.

BUFFALO, N. Y.—Republic Metalware Co., 90 Alabama street, C. W. Wells president, is having plans made for extensions of its plant, by Hudson & Hudson, architects, Dun building.

BUFFALO—American Radiator Co. is undertaking additions and betterments to its standard plant, 22 Roseville street; a 1-story addition 100 x 300 feet and 100 x 330 feet to its malleable plant.

BUFFALO, N. Y.—Salzman Sanitary Supply Co. has been formed and will build a plant and warehouse at 137 Dewey avenue. George Salzman, 151 Woodward avenue, is president and Irene M. Hilborn secretary.

BUFFALO—Duplex Automatic Heating System has been incorporated with 500 shares at $100 each and 500 shares common no par value by G. Duchsherer, E. K. Duchsherer and E. R. Boeck. E. J. Garono, Buffalo, is attorney.

ENDICOTT, N. Y.—Transmission Clutch Control Co. has been incorporated with 500 shares stock and 1000 shares no par value by E. C. Freeman, T. B. Kelday and S. J. Marshall. H. H. Farmer, Syracuse, is attorney.

JAMESTOWN, N. Y.—Jamestown Specialty & Mfg. Co. has been incorporated to manufacture tools, with $20,000 capital, by W. L. Markham, S. A. Markham and M. F. Risley. O. L. Wright, Jamestown, is attorney.

LONG ISLAND CITY, N. Y.—American Radiator Co. has sold its property here, 336 feet frontage on Newton creek, to the Lotus Oil & Distributing Corp., which will build a plant.

NEW YORK—American Meter Co., 105 West Fortieth street, will take bids soon on a 4-story plant 76 x 100 feet at 563 West Forty-seventh street.

NEW YORK—Rex Copper works has been incorporated with $10,000 capital by W. Walter Jr., J. Florea and T. J. McAvoy. C. W. Walter, 233 Broadway, is attorney.

NEW YORK—Consolidated Gas Co., 130 East Fifteenth street, will build a 4-story gas producer and boiler plant 43 x 218 feet, from plans by J. F. Hunter, architect.

NEW YORK—American Smelting & Refining Co., 120 Broadway, is having plans made for extensions to its lead mill at Helena, Mont., to increase capacity about 10 per cent.

NEW YORK—Palm Mfg. Co. has been incorporated with $100,00 capital to manufacture

fasteners by F. Ulrich and S. Kassel. D. Kassel, 51 Chambers street, is attorney.

NEW YORK—American Meter Co., 105 West Fortieth street, D. McDonald manager, is having plans made for a 4-story plant 75 x 100 feet.

NEW YORK—A. C. Chesley Co., 704 East 133rd street, manufacturer of metal covered and metal doors is taking bids on a 2-story plant 125 x 180 feet.

NEW YORK—Standardized Steel Products Co. has been incorporated with $10,000 capital by A. Danner, T. Stone and V. Stern. Prince & Loeb, 19 Cedar street, are attorneys.

NEW YORK—New York Steel Ball Co., has been incorporated to manufacture ball bearings with $50,000 capital by J. J. Hayden, J. A. Carroll and J. C. Spallone. Hastings & Gleason, 258 Broadway, are attorneys.

NEW YORK—Williamsburgh Fireproof Sash & Door Corp. has been incorporated with $20,000 capital by A. Grelf, A. Samokiczuk and B. Katz. D. Gronberg, 861 Manhattan avenue, Brooklyn, N. Y., is attorney.

NEW YORK—Craftsmen Iron Works has been incorporated with 100 shares common stock no par value by I. Sitkoff, F. S. Sitkoff and C. Kelner. R. I. Sitkoff, 4 Lewis Place, is attorney.

NEW YORK—Automatic Day Bed Co. has been incorporated with 100 shares common stock no par value by E. Whyman, M. R. Glass and M. Rubin. Walters & Whyman, 47 West Thirty-fourth street, are attorneys.

NEW YORK—Marsek Directional-Signal Corp. has been incorporated with $100,000 capital to manufacture automotive devices by S. Marsek, D. Marsek and A. S. Holywell. E. F. Holywell, 44 Court street, is attorney.

NEW YORK—J. E. Kennedy Corp. has been incorporated with 100 shares common stock no par value to manufacture pumps by W. A. Daly, B. G. Bain and E. Murphy. Dunn & Daly, 261 Broadway, are attorneys.

NEW YORK—Empire Floor Machine Corp. has been incorporated with $5000 capital to manufacture machinery by J. Goldsmith, H. Melitzer and M. Samuels. C. C. Schwartz, 115 Broadway, is attorney.

NEW YORK—Sokolow Engineering Works has been incorporated with $5000 capital to manufacture machinery by C. Sokolow, I. Kaufman and S. Glabman. P. S. Glickman, 229 Broadway, is attorney.

NEW YORK—Standard Steam Iron Corp. has been incorporated with $50,000 capital by A. Adams, I. H. Kutz and J. T. Conway. Hirsch, Newman & Reass, 100 Broadway, are attorneys.

NEW YORK—Universal Spring Co. has been incorporated with 200 shares common stock no par value to manufacture cushion springs by W. L. Estabrooke, E. H. Turninski and I. J. Dale. U. S. Corporation Co., 150 Broadway, is attorney.

NORTH TONAWANDA, N. Y.—Tonawanda Steel Castings Corp. has been incorporated with 250 shares common stock no par value by L. J. Fitzpatrick, C. F. Towne and F. J. Still. O'Brien & Hellings, Buffalo, are attorneys.

ROCHESTER, N. Y.—Necessities Mfg. Corp. has been incorporated with 50 shares at $50 each and 200 shares no par value to manufacture ear phones and radio equipment by F. E. Tiffany, G. J. Hollis and F. J. Smith Jr. A. E. Webster, Rochester, is attorney.

SPRING VALLEY, N. Y.—Consolidated Stamp Works, West street, is having plans made for an addition to its plant.

GREENSBORO, N. C.—Cooke-Lewis Foundry Co., 422 Fields avenue, has bought the Westbrook Elevator Co. and plans remodeling and re-equipping.

WINSTON-SALEM, N. C.—Kester Machinery Co., Cole street, is building a pipe fabricating plant 50 x 100 feet and storage shed. Will install complete equipment for cutting, bending and threading pipe up to 12 inches.

CANTON, O.—H. J. Eberman is having plans drawn for a 1-story structural steel manufacturing plant, 1103 Eighteenth street.

CINCINNATI—Witt Cornice Co., J. W. Witt president, 2124 Winchell avenue, will build a 1-story plant 93 x 300 feet.

CINCINNATI—East Side Welding Co. has been incorporated with $1500 capital by Florence Trimble, Charles E. Springmyer, Joseph M. Doyle, Frederick Gross and William Rebbtin.

CLEVELAND—Owen Bucket Co., W. H. Botten president, Rockefeller building, will build a 1-story plant and shipping room 92 x 120 feet.

CLEVELAND—Clark Controller Co. has bought additional property adjoining its plant from the Automobile Screw Products Co. and is considering plans for enlarging its facilities.

CLEVELAND—Gluntz Foundry Co., 3005 East Fifty-fifth street, will build a 1-story addition to its foundry 60 x 126 feet and 24 x 30 feet.

CLEVELAND—Cleveland Automobile Co., J. V. Whitbeck president, will build a 4-story addition 83 x 100 feet. General contract to William Dunbar Co., 8201 Cedar avenue. Ernest McGeorge is architect and engineer.

CLEVELAND—United States Air Compressor Co., R. L. Bacher president, 5300 Harvard avenue, will build a 1-story plant 80 x 90 feet. General contract to S. Emerson, 508 Union building.

CLEVELAND—Cox Products Corp., 5605 Luther avenue, northeast, has awarded general contract to William Dunbar Co. for a new plant in which shock absorbers and other automobile accessories will be manufactured.

FOSTORIA, O.—Seneca Wire & Mfg. Co., L. E. Kinn president, will build a 1-story addition 160 x 375 feet.

DAYTON, O.—Insland Mfg. Co., Coleman street, is having plans made for a 2-story addition to its plant for the production of metal specialties.

TOLEDO, O.—Electric Auto Lite Co., C. O. Miniger president, Champlain street, will build a 4-story addition 100 x 300 feet.

TOLEDO, O.—Peerless Malleable Castings Co. has been incorporated with $250,000 preferred and 5000 shares no par value by Howard Lewis, C. T. Lewis, Robert Newbegin, Charles H. Lemmon and Milo J. Warner.

ALTOONA, PA.—The Pennsylvania railroad will expand its freight yard at East Altoona.

HARRISBURG, PA.—Germeyer Engineering Co. Inc., 601 Walnut street, has been incorporated with $10,000 capital to manufacture a blower and control apparatus for small combustion units.

PHILADELPHIA—Bids will be closed Feb. 25 through McKenzie & Wiley, architects, for a motor building for George Wilcox, at Fairfield and Brief avenue.

PHILADELPHIA—Carauto Co. has been incorporated with $5000 capital to manufacture metal specialties by George E. Dugan, 208 Marshall avenue, Abbie E. Davis, Alfred I. Reese.

PHILADELPHIA—Frederick Grundy Iron Works Inc., VanHorn and Sophia streets, has been incorporated with $20,000 capital to take over the business of Frederick Grundy, architectural iron, preliminary to expanding.

PHILADELPHIA—Contract has been awarded to the George Kessler Contracting Co., 1733 North Marvine street, for an $18,000 ice manufacturing plant for the Kensington Hygeia Ice Co., Van Dyke and Leach streets.

PITTSBURGH—Garden King Tractor Co., 1327 Main street, George L. Mazer president, will build a plant at Stoneville, N. C., 50x100 feet, for the manufacture of tractors and other farm equipment.

SPRING CITY, PA.—Keystone Drawn Steel Co. has been incorporated with $300,000 capital to manufacture steel products by Isaac D. Hetzell, 322 Richmond street, Philadelphia, Willard N. Lynch, Joseph J. Komara, Alfred J. Kinnucan and Richard Curry.

WARREN, PA.—Phenix Furniture Co. has been incorporated with $500,000 capital to manufacture metal furniture by P. R. Maitland, F. H. Newmaker, F. H. Reed, George Anderson and Mary Newmaker.

WARREN, PA.—DeLuxe Metal Furniture Co. has been incorporated with $250,000 capital to manufacture metal furniture and similar products by H. W. Connaro, H. P. Stone, H. G. Onions, H. D. Kopf, L. H. Hull, Clarence Beckley and A. J. Hazeltine.

GREENVILLE, S. C.—Bahan Textile Machinery Co., South Main street, has been incorporated with $25,000 capital.

CHATTANOOGA, TENN.—Columbian Iron Works Inc. is having plans made for a 1-story addition to its machine shop.

KNOXVILLE, TENN.—Fulton Co., West Cumberland avenue, is building two 1-story experimental laboratory buildings and a 2-story office building.

LEWISBURG, TENN.—Lewisburg Stove Co. will build addition to its foundry 72 x 120 feet.

PARIS, TENN.—Louisville & Nashville railroad, W. H. Courtenay, Louisville, Ky., chief engineer, is having plans made for shops to replace those recently burned at West Paris.

HOUSTON, TEX.—Texas Iron Works Sales Corp. has been incorporated with $20,000 capital by A. W. Crosby, Humble building, and others.

HOUSTON, TEX.—Standard Collapsible Rotary Drill Co., Scanlan building, has been organized to produce and sell a special type drill for oil drilling. It probably will have the drill manufactured by contract and may build a plant later.

SEATTLE—Northwest Steel Rolling Mills Inc. has been incorporated with $200,000 capital by Abe Goldberg and James B. Stirrat Jr.

SEATTLE—Standard Boiler & Machine

Refractories

FIRE CLAY BRICK

Per 1000 f.o.b. works

Pennsylvania, No. 1	$43.00 to 45.00
Pennsylvania, No. 2	35.00 to 40.00
Ohio, No. 1	43.00 to 46.00
Ohio, No. 2	38.00 to 40.00
Illinois, No. 1	40.00 to 43.00
Illinois, No. 2	35.00 to 38.00
Kentucky, No. 1	43.00 to 45.00
Kentucky, No. 2	40.00 to 43.00
Missouri, No. 1	43.00 to 46.00
Missouri, No. 2	35.00 to 38.00
Maryland, No. 1	43.00 to 47.00
Maryland, No. 2	39.00 to 42.00

SILICA BRICK

Pennsylvania	40.00
Chicago	49.00
Birmingham	48.00 to 52.00

MAGNESITE BRICK

Per Net Ton Seaboard Base

9 x 4½ x 2½	65.00

CHROME BRICK

(Per Net Ton)

9 x 4½ x 2½	45.00 to 48.00

They're Coming To It Rapidly!

The popularity of metal furniture has far exceeded expectations. Its beauty of form and finish and its unmatched strength and durability have won esteem for it in the finest as well as the simplest homes. The baked enamel finish of metal furniture is immune to the ordinary accidents of the home. Lighted cigars, spilled perfume, etc., will not mar it in the slightest.

Much of the beauty of finish is directly due to the use of finely finished steel sheets. For this reason,

MANSFIELD

Metal Furniture Sheets

are used extensively as the basic material for the products of many of the largest manufacturers of metal furniture. Their remarkably high character is due to scientific treatment of the metal in the open hearth furnace, and the Mansfield distinctive method of pouring the ingots from which our sheets are rolled. Mansfield ingots are low in sulphur and free from "pipes", seams, etc.

Mansfield Sheet & Tin Plate Company

Mansfield, Ohio

District Sales Offices:

12-237 General Motors Bldg., Detroit Mich.
1372 Wrigley Bldg., Chicago, Ill.
410 Pierce Bldg., St. Louis, Mo.
1106 National City Bldg., New York, N. Y.
2002 Union Trust Bldg., Cleveland, Ohio
1504 West Venango Street, Philadelphia, Pa.

Contributing Member
SHEET STEEL
TRADE EXTENSION COMMITTEE

District Sales Offices:

1403 Merchants Bank Bldg., Indianapolis, Ind.
1020 Union Trust Bldg., Cincinnati, Ohio
640 Endicott Bldg., St. Paul, Minn.
237 Rialto Bldg., San Francisco, Calif.
509 Wilcox Bldg., Los Angeles, Calif.
1426 L. C. Smith Bldg., Seattle, Wash.

Works has been incorporated with $100,000 capital by D. M. Miller, T. H. Scheumann, A. J. T. Edwards, J. Park Cutting, Vernon L. Maxfield and P. J. Wiszerek.

FARMINGTON, W. VA.—Hygeia Mfg. Co., A. V. Lynch president, will rebuild its burned plant. The company manufactures refrigerating machinery.

WEST CHARLESTON, W. Va.—Litter Piston Mfg. Co., 744 Virginia street, is planning an addition to its plant for which equipment will be required.

BELOIT, WIS.—P. F. Mork Foundry Co. is building an addition and will install an electric traveling crane.

DEPERE, WIS.—The Hudson Mfg. Co., Minneapolis, maker of agricultural appliances and dairy farm devices, will not abandon its branch plant at DePere, which was badly damaged by fire some time ago. Improvement in business has resulted in a change in the original intention of consolidating the DePere plant with the recently acquired C. A. Libbey Co., Oshkosh, Wis.

MILWAUKEE—A. B. & B. Sheet Metal Works, C. Stolper president, 330 Fond du Lac avenue, will build an addition to its sheet metal shop, one story, 40 x 130 feet.

MILWAUKEE—The Cortsa Mechanical Laboratories of Milwaukee have been incorporated without change of name, with 5,000 shares of common stock of no par value. The concern manufactures motors and other mechanical appliances and does experimental and production engineering. Reimar C. F. Kurtze is general manager.

NEENAH, WIS.—Bergstrom Stone Co. will rebuild at once is burned plant and install new equipment.

Business in Canada

LETHBRIDGE, ALT.—Commissioner Freeman has recommended to the city council that a 1400-gallon centrifugal pump be purchased for pumping station at a cost of $7,500.

VANCOUVER, B. C.—Vaucouver Oil Refining Co. will build a pier 700 feet long, equipped with pipe line and track trestle.

VANCOUVER, B. C.—The Capilano Timber Co. proposes to start construction work at once on the erection of mills here to cost upwards of $1,000,000, according to G. G. Johnson, general manager. The mills will have a capacity of 250,000 feet of lumber and 200,000 shingles per year.

HAMILTON, ONT.—The Steel Co. of Canada, Ltd., proposes to install a sintering plant here in order to make use of the large tonnages of flue dust that have been accumulating over a period of years.

WINDSOR, ONT.—The water commission proposes to install a new steam emergency pump, which will necessitate the enlarging of pumping station. Address Mayor Frank J. Mitchell.

LIMOILU, QUE.—Plans are under way for the erection of large workshops here for the Quebec Power Co., Quebec, to cost $400,000. According to a statement issued by president, Julian C. Smith, construction work will be started early next summer.

QUEBEC, QUE.—It is reported that the Anglo-Canadian Pulp & Paper Co., will start work early in May on the erection of mills here.

New Trade Publications

MACHINERY GUARDS — Various types of machinery guards are shown in a bulletin from the Cleveland Blow Pipe & Mfg. Co., Cleveland.

FORGING—A bulletin by the National Machinery Co., Tiffin, O., manufacturer of forging machines, describes equipment for the production of insulator pins.

GRAPHITE—A folder giving the principal sources of supply and some of the uses of this product is being issued by George F. Pettinos, Philadelphia.

LIFT TRUCK PLATFORMS—Stuebing Co., Cincinnati, has issued a broadside indicating the type of steel-bond platform it constructs for carrying heavy loads for the lift truck.

CHAINS AND SPROCKETS—Diamond Chain & Mfg. Co., Indianapolis, has published a general catalog covering its chain and sprocket lines and presenting also much engineering data of use to engineers.

CROSSING SIGNALS — Crouse-Hinds Co., Syracuse, N. Y., has issued a folder describing manually controlled crossing signals. Operating costs of flagmen and electric signals are compared.

TORCHES—Torches for cutting and welding are illustrated in a catalog by the Alexander Milburn Co., Baltimore, Md. Full detailed descriptions of various types of torch and their parts are presented.

GASKETS—Metallo Gasket Co., New Brunswick, N. J., has issued a catalog covering its line of gaskets for various uses. It includes instructions for choosing the gasket best suited to the purpose. Data relating to use of gaskets is included.

WRENCHES—Bonney Forge & Tool Works, Allentown, Pa., has done an unusual piece of work in reproducing its large catalog in miniature, almost vest pocket size. Even in its small size it is clearly legible and its size makes it convenient.

CONCRETE MIXERS—Equipment for rapid and efficient mixing of concrete is described in a catalog by the Standard Scale & Supply Corp., Pittsburgh. The various types and sizes of mixers and their adaptations are fully described and illustrated.

VIBRATION ISOLATOR—Absorption of vibration of machinery in buildings by the use of its isolating material is described in a bulletin by the Korfund Co., New York. Installations are illustrated and the principles involved in its use are explained.

STEEL STAMPINGS—Savings possible by the use of pressed steel instead of other metallic forms is set forth in a booklet by the Heintz Mfg. Co., Philadelphia, attractively illustrated to show the wide application of stampings and welded assemblies in various industries.

ELECTRIC FURNACE—Its line of electric furnaces for melting steel in the foundry is described in a bulletin by the Pittsburgh Electric Furnace Co., Pittsburgh. Large and small castings from electrically melted steel are illustrated and installations in various plants are shown.

STEAM GENERATOR—A new type of boiler designed to do away with some of the inefficient features of the usual steam generator is illustrated and described in a bulletin by the Combustion Engineering Corp., New York. Full details and ample illustrations of the generator and its details are presented.

CLUTCH PULLEYS—Hill Clutch Machine & Foundry Co., Cleveland, is issuing a book on mill equipment, featuring its devices. This will be a comprehensive catalog covering all phases of power transmission through belts, ropes and gears. Some advance pages have been issued.

ROTARY BLOWERS—Applications of rotary positive blowers ranging from testing toy balloons and operating calliopes to supplying air for industrial furnaces are listed by the Connersville Blower Co., Connersville, Ind., in a bulletin just issued. The construction and operation of the blowers is given in detail.

TOOL STEEL—A tool steel catalog has been issued by Henry Disston & Sons Inc., Philadelphia, descriptive of various types of electric furnace tool and alloy steels of their manufacture. It contains much valuable information on the uses, heat treatment and physical characteristics, supplemented by tables of standard steel data.

SPACING MACHINE—A hand-operated spacing machine for use with punches in preparing plates, angles and beams for fabrication is described in a bulletin by the Steining Spacing Machine Co., Pittsburgh. Diagrams illustrate typical arrangements of material on a triple-pass table and the method of operating is described.

WATER MEASUREMENT—Republic Flow Meters Co., Chicago, has issued a bulletin on the measurement of water, containing much information to everyone interested. It describes the method of electrically measuring the flow of water in pipes, with recording instruments. Photographic illustrations of actual installations are given.

INDUSTRIAL LOCOMOTIVE—A 4-ton industrial locomotive with a Fordson power plant is described in a bulletin by the Davenport Locomotive Works, Davenport, Iowa. The advantage of this type is its standard construction and ease of replacement of parts. Its speed range is 3 to 14 miles per hour with three forward and three reverse speeds.

DUST REMOVAL—A pamphlet on dust collection systems for removing shavings and sawdust from woodworking machines, published by the Cleveland Blow Pipe & Mfg. Co., Cleveland, is illustrated with typical shop installations. Hoods and exhaust systems for other dust producers, such as buffing, polishing and grinding operations, are described in another bulletin.

STRIP STEEL—A small piece of strip steel, .0012-inch thick and ⅛-inch wide, is mounted in a leaflet by Edgar T. Ward's Sons Co., Philadelphia, illustrating what can be done in the production of fine steel. The small strip was rolled by the Uddeholms Co. Ltd., Sweden, by a man 77 years of age and a helper past 50 years, each of whom has been with the company since they were 14 years of age. The order for this size called for 10 pounds and the strip was nearly four miles long.

FREYN ENGINEERING COMPANY

Engineers and Contractors

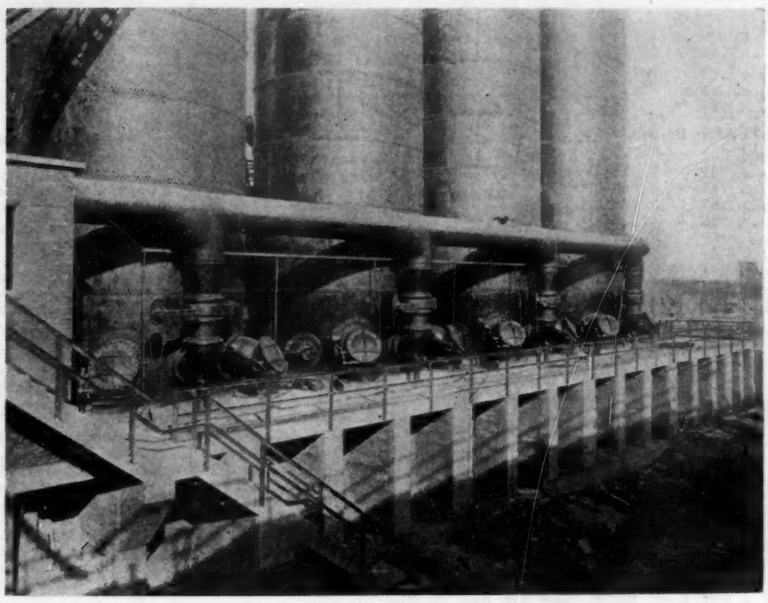
-⊡-

Hot Blast Stoves and Fittings

Number of Hot Blast Stoves designed and built..... 117
Number of Chimney Valves installed..... 120
Number of MATHESIUS Hot Blast Valves installed..... 154
Number of Stove Burners installed..... 92

Exclusive Licensors for Smoot Combusion Control on Hot Blast Stoves.

Exclusive Licensors under Pfoser (P. S. S.) Patent for Two and Three Stove Operation.



Modern stove practice demands not only stove design that is efficient and will give high straight line heat, but construction that will withstand the heavy duty imposed. FREYN ENGINEERING COMPANY Hot Blast Stoves have been designed to care for these requirements.

That the blast furnace industry recognizes the advantages of these stoves is shown by the installations:

Mississippi Valley Iron Company
Struthers Furnace Company
Youngstown Sheet and Tube Company
Iroquois Plant, Nos. 3 and 5 furnaces
Indiana Harbor Plant, Nos. 1 and 2 furnaces
A. M. Byers Company
Weirton Steel Company, Nos. 1 and 2 furnaces
Zenith Furnace Company
Shenango Furnace Company
Southeastern Iron Corporation
Belfont Iron Works Company
American Rolling Mill Company
Norton Iron Works
St. Louis Coke & Iron Corp. Nos. 1 and 2 furnaces
Algoma Steel Corporation
Trumbull-Cliffs Furnace Company
Koninklijke Nederlandsche Hoogovens En Staalfabrieken, Nos. 1 and 2 furnaces
Wheeling Steel Corporation
Steubenville and Martins Ferry Plants
Reliance Coke and Furnace Company
Witherbee, Sherman and Company
Columbia Steel Corporation
Central Furnace Company
Mystic Iron Works

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Office: 310 South Michigan Avenue, CHICAGO

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount of $4 per ton higher net.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis or $5 per ton higher net.

Butt Weld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	46	42½
¾-inch	60	48½
1 to 3-inch	62	50½

Lap Weld

2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½

REAMED AND DRIFTED

Butt Weld

1 to 3-inch	60	48½

Lap Weld

2-inch	53	41½
2½ to 6-inch	57	45½

EXTRA STRONG—PLAIN ENDS

Butt Weld

⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½

Lap Weld

2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½

DOUBLE EXTRA STRONG

Butt Weld

½-inch	42	12½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½

Lap Weld

2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	83	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis

TREADS AND COUPLINGS

Butt weld

¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13

Lap Weld

1¼ and 1½-inch	Upon	application
2-inch	23	7
2½ to 6-inch	26	11
7 to 6-inch	28	13
7 to 12-inch	26	11

PLUGGED AND REAMED

Two points less than above

EXTRA STRONG, PLAIN ENDS

¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14

Lap Weld

2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
8 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld

½-inch	+47½	+59½
¾-inch	+28	+40
1-inch	+34	+40
1¼-inch	+28	+40
1½-inch	+27	+39

Lap Weld

2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized.)

Boiler Tubes

Pittsburgh less carload discounts. Carload 4 points larger

STEEL (Lap Welded)

2 and 2¼-inch	23 off
2½ and 2¾-inch	33 off
3-inch	36 off
3¼ to 3¾-inch	38½ off
4 to 13-inch	42 off

(Note—Additional discounts of 5 to 7 extra 5 per cents now being given.)

CHARCOAL IRON

1½-inch	+22
1¾-inch	+12
2 and 2¼-inch	+ 2
2½ to 3-inch	3
3¼ to 4½-inch	5

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS COLD DRAWN

1-inch	56 off
1¼ and 1½-inch	48 off
1¾-inch	32 off
2 and 2¼-inch	27 off
2½ and 2¾-inch	35 off
3-inch	41 off
3¼ and 3½-inch	43 off
4-inch	46 off
4½, 5 and 6-inch	41 off

SEAMLESS HOT ROLLED

2 and 2½-inch	30 off
2½ and 2¾-inch	38 off
3-inch	44 off
3¼ and 3½-inch	46 off
4-inch	49 off
4½, 5 and 6-inch	44 off

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.20 per cent.....50 to 55 off

Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Outside diameter	Gage	Net prices per foot f.o.b. Pittsburgh Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	12-gage	16c
2¼-inch	11gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5⅜-inch	9-gage	50c
6½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, dated Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge, (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates, Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weigh—

Over 100 inches to and including 110 inches	.05c
Over 110 inches to and including115 inches	.10c
Over 115 inches to and including 120 inches	.15c
Over 120 inches to and including 125 inches	.25c
Over 125 inches to and including 128 inches	.50c

Plates less than ¼-inch or lighter than 11 pounds per square foot.

Over 72 inches to and including 84 inches	.10c
Over 84 inches to and including 96 inches	.20c
Over 96 inches to and including 100 inches	.30c

Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.

GAGE

Plates not Exceeding 72 inches Wide

Plates less than ¼-inch gage, to and including $\frac{7}{16}$-inch; or lighter than 10.2 pounds per square foot to and including 7.65 pounds per square foot ..... .20c

Plates Over 72 Inches Wide

Plates less than ¼-inch gage, to and including $\frac{7}{16}$ inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds per square foot ..... .20c

Plates ordered 7.65 pounds per square foot ..... .30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	.20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull material subject to U. S. Navy Dept. Specifications for Medium or Soft Steel	.10c
High tensile hull steel subject to U. S. Navy Dept. or equivalent specifications	1.00c
Boiler steel subject to U. S. Navy Dept. Specifications, classes A and B	1.50c

Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet....No extras

Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.25c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

With not more than four straight cuts. (including straight taper plates)

Additional extra ..... .10c

Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared with re-entrant angles)

Additional extra ..... .20c